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The Efficacy Of Effort: Differences In Teachers' Sense Of Efficacy Based On Type Of Teacher Training And Number Of Years Of Experience

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THE EFFICACY OF EFFORT: DIFFERENCES IN TEACHERS' SENSE OF EFFICACY BASED ON TYPE OF TEACHER TRAINING AND NUMBER OF YEARS OF EXPERIENCE

by

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ABSTRACT

Current federal reforms require a highly-qualified teacher in every classroom to promote higher levels of student performance. In an attempt to provide a sufficient and sustainable number of highly qualified teachers in the workforce, alternative certification training programs have come alongside traditional college of education training programs. Proponents of alternative certification programs contend the process of on-the-job training will potentially address the problem of teacher shortages. However, opponents see these programs as an inadequate training process with future ramification for both teachers and students. As more and more classroom teachers are choosing alternative certification routes, there is growing uncertainty as to whether or not this is an effective way to train teachers.

There is a substantial body of research that indicates a teacher's self efficacy beliefs can be an indicator of his or her performance in the classroom. Evidence demonstrates a relationship between teachers' beliefs about their personal ability to affect students' achievement and the outcomes of both the teachers' and the students' efforts (Tschannen-Moran & Woolfolk Hoy, 2007). By identifying strengths and weaknesses in self-efficacy beliefs, it is possible to provide interventions such as professional development or peer mentoring to increase an individual's sense of efficacy, which could then improve his or her teaching performance, and ultimately improve student achievement.

The purpose of this research study was to identify and describe the differences between (1) the self-efficacy beliefs of teachers from traditional college of education programs and from alternative certification programs in order to identify patterns or correlations between type of

training and teachers' sense of efficacy, and (2) the self efficacy beliefs of novice, experienced, and expert teachers in order to determine patterns or correlations between years of experience and teachers' sense of efficacy.

This research study investigated the self-efficacy beliefs of 125 high school teachers in Brevard County, Florida, with either college of education training or alternative certification training and with either novice, experienced, or expert classroom teaching experience. The first part of the study analyzed teachers' responses to the 24 items on Tschannen-Moran and Woolfolk Hoy's Teachers' Sense of Efficacy Scale; the second part analyzed 6 researcher-designed items referring to teacher training programs and personal classroom experience. The three subscales that directed the items on the questionnaire were Efficacy for Student Engagement, Efficacy for Instructional Strategies, and Efficacy for Classroom Management.

Factor analyses indicated 21 of the 24 items from the current research study loaded on the same three factors identified on the Teachers' Sense of Efficacy Scale. The 6 items created specifically for this study loaded into two factors identified appropriately as training program and classroom experience. A reliability analysis resulted in a total alpha coefficient of .9271 for the 24 items on the Teachers' Sense of Efficacy Scale for the 125 participants in the current research study which is consistent with an alpha of .94 in previous studies using the same scale. A total alpha coefficient of .6973 was determined for the 6 researcher-designed items.

Findings from the *t*-tests and ANOVAs indicated that there was no relationship between self-efficacy beliefs of college of education trained teachers and alternative certification trained teachers; few relationships between novice, experienced, and expert teachers; and few interaction effects between type of teacher training and number of years of classroom experience. While the

results of the study did not reveal statistically significant differences in the teacher groups, the teachers' responses and comments indicated personal classroom experiences created higher levels of self-efficacy than teacher training programs.

Contrary to the researcher's expectations and conventional wisdom, both alternative certification teachers and novice teachers perceived themselves to be efficacious in the classroom. One possible explanation for the failure to reach statistically significant differences in the type of training and years of experience variables is that there simply are not distinct differences. Generally teachers with alternative certification training are immersed in programs that provide on-the-job training and support from a mentor, and as experts in their field of study, they exhibit self-assurance in their classroom behaviors. Commonly novices enter teaching with high expectations and they bring innovative practices and a fresh outlook to the classroom.

Another possible explanation for the failure to reach statistically significant differences is the over-representation of some groups which could possibly have skewed the results. From the group of 125 participants, 86 teachers had college of education training while only 39 had alternative certification training. There were 79 expert teachers with ten or more years of experience, 35 experienced teachers with four to nine years, and only 11 novice teachers with three or less years.

While the results of the research study did not offer statistically significant differences in the groups of teachers, there is much practical significance to be gained for district and school-level personnel in planning professional development opportunities. By identifying the strengths and weaknesses in teachers' self-efficacy beliefs, professional development and peer support can be provided to address the unique needs of each teacher group.

Recommendations were made for a synthesis of current practices from both college of education programs and alternative certification programs: a series of half-day internship experiences with relevant content coursework could be combined with on-the-job experience and mentoring support based on current alternative certification programs. This research study lacks generalizability, so further research should include middle school and elementary teachers, and teachers from other counties and states. Because teachers' self-efficacy beliefs are personal and not necessarily reflective of actual practice, an investigation of the relationship between perceived self-efficacy beliefs and observed classroom effectiveness should be investigated.

To Mom

Thank you for *always* believing in me.

Thank you for never-ending words of encouragement.

Thank you for shopping ‘til we drop and chatting during lunch.

Thank you for doing my dishes and watering my plants and giving treats to my kitties.

Thank you for being the person I someday hope to become.

I love you!

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TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

CHAPTER ONE: INTRODUCTION

The most important document in educational reform of the 20th century is *A Nation at Risk* published in 1982 (Smith, 2008). The report blamed "falling or stagnating levels of pupil performance" on the questionable quality of the teaching profession and insisted that raising the standards for teacher training and professional development would strengthen the profession (Smith, 2008, para. 2). Two decades later, the *No Child Left Behind Act* (NCLB) of 2002 mandated educational reform in order to ensure that every teacher would be highly qualified in his or her subject area and "to reduce the barriers to becoming a teacher by 'retooling' traditional teacher education programs" (Smith, 2008, para. 3).

School reformers and policy makers believed that most teachers were "stuck," and therefore, serious intervention was needed to "unstick" them (Richardson & Placier, 2001). A report from the US Secretary of Education contends that improving teacher quality would do more for student achievement than other school reforms such as class size and providing more capital funds to schools (Darling-Hammond & Youngs, 2002). The focus of school reform moved from students' achievement to teachers' performance. Hence, just as students required "a sense of identity and agency as learners" in order to be successful in school (Shaughnessy, 2004, p. 174), teachers would need a sense of identity and agency as teachers to succeed in teaching.

Problem

Repeatedly, research has shown that the most important factor for educational improvement is *good teaching* (Poftak, 2003). Shulman maintains that good teaching must be

defined within the context in which teachers are teaching, while Dewey identifies a good teacher as an artist whose practice defies our common ideals of good and bad or right and wrong (Bunting, 2006). There is no commonly-accepted definition of good teaching. Perhaps that is why the concept of teacher quality with its requisite components of content and pedagogy is so elusive (Kennedy, 2006). The problem of teacher quality has become the heart of policy and reform.

In the past decades, the decline in the number of students entering teacher education programs has created a shortage of teachers (Guyton, Fox, & Sisk, 1991). As school districts struggle to fulfill state and federal mandates to have a highly-qualified teacher in every classroom, alternative certification programs are providing a convenient pool of prospective teachers (Tournaki, Lyublinskaya, & Carolan, 2009). The alternative certification routes are training non-education majors who would enter the field of teaching if they could avoid education courses and student-teaching requirements (Guyton et al., 1991). Humphrey and Wechsler (2006) insist that the particular alternative certification program has less influence than the individual himself. Within any particular program, people with prior classroom experience or those without experience and people with previous careers or those new to the workforce "experience the program in dramatically different ways" and left the program with diverse knowledge and skill sets, as well as different attitudes and beliefs (para. 4).

Although proponents claim the alternative certification programs are offering a solution, opponents insist that "common sense and empirical data" point to the fact that individuals with more extensive and more rigorous training will be more successful in their teaching (Laczko-Kerr & Berliner, 2003, p. 38). These alternative programs seem promising, but they are

generating controversy in both policy circles and colleges of education. Laczko-Kerr and Berliner (2003) warn that schools are hiring undercertified teachers at the same time as they are struggling to increase student performance. According to Darling-Hammond (2005), incoming teachers have more limited access to the knowledge they need and students have less access to well-qualified teachers. Regrettably, many of the poor districts facing budget crises have been forced to lower their standards when filling teaching vacancies. There is concern that gap is becoming "more unequal than every before" (Darling-Hammond, 2005, p. 238).

The problem, therefore, lies in the current trend in teacher preparation as a movement away from teacher training in colleges of education and toward alternative certification pathways. Brewer (2003) laments that the educational system has quickly moved from an interest in "raising teaching standards and quality to an ultrafunctionalistic vocational … concern for staffing" (p. 8). As more and more classroom teachers are choosing alternative certification routes, there is growing uncertainty as to whether or not this is an effective way to train teachers. Perhaps alternative certification programs are not contributing to successful teaching practices. If teachers with alternative certification are less capable than their counterparts with college of education training, there could be serious repercussions in the quest for placing a highly qualified teacher in each classroom.

Smith (2008) explains the controversy between alternative certification training and college of education training as a difference between a "decentralized teacher licensing system governed by choice and market forces where prospective teachers can enter the profession by a variety of ways" and a teacher training method that includes courses in methods and pedagogy and is governed primarily by schools of education (para. 9). In response to the controversy, many

state universities have "ignored … curriculum mandates, maintained their current curriculum, and graduated students without a state-approved status" while other universities have eliminated teacher education programs and, therefore, left their graduates in charge of obtaining the appropriate teaching credentials (Brewer, 2003, p. 5). Cibulka (2009), president of the National Council for Accreditation of Teacher Education (NCATE), envisions "high quality non-university alternative approaches" as a way to create new models of teacher training that would broaden the current accreditation system (p. 1). As the debate over the dominance of college of education training or alternative certification continues, Cochran-Smith warns educators about the necessity to go beyond the "horse race" and to focus on preparation of *all* teachers by looking at the "essential ingredients" and the "ways these interact" in order to create teacher candidates who can work within the contexts of their schools to produce effective outcomes for both teacher and students.

The need to place a highly-qualified teacher in every classroom is indeed problematic. While there is probably no "best way" to prepare teachers, there is growing evidence that reveals a relationship between teachers' beliefs about their personal ability to affect students' achievement and the outcomes of both the teachers' and the students' efforts (Tschannen-Moran & Woolfolk Hoy, 2007). This substantial body of research indicates that a teacher's self efficacy beliefs can be an indicator of his or her performance in the classroom. However, Tschannen-Moran, Woolfolk Hoy and Hoy (1998) emphasize that self-efficacy drives an individual's *perception* of competency rather than his or her *actual* level of competency. Further, Schunk and Pajares (2005) insist that no amount of competency, ability, or effort will produce a successful performance unless a person has the requisite knowledge and skills. Consequently, by

identifying strengths and weaknesses in teachers' self-efficacy beliefs, it is possible to provide interventions such as professional development or peer mentoring to increase an individual's sense of efficacy, which could then improve his or her teaching performance, and ultimately improve student achievement.

Purpose

The purpose of this research study was to identify and describe the differences between (1) the self-efficacy beliefs of teachers from traditional college of education programs and from alternative certification programs in order to identify patterns or correlations between type of training and teachers' sense of efficacy, and (2) the self efficacy beliefs of novice, experienced, and expert teachers in order to determine patterns or correlations between years of experience and teachers' sense of efficacy.

Theoretical Framework

Social Cognitive Theory

Bandura's (1977) social cognitive theory posits that cognitive processes mediate changes in behavior. The development of behavior is a result of observing models and forming symbolic conceptions of behavior patterns. These symbolic constructions then direct the performance of new behaviors. Reciprocal determinism, a major tenet of social cognitive theory, is the interaction of (1) personal factors such as cognition, affect, and biological events, (2) behavior, and (3) environment to create a triadic reciprocality (Schunk & Pajares, 2005).

The conceptualizations of human agency, motivation, and expectancy are explained through social cognitive theory. Agents are proactive and, therefore, exercise control over their

own behavior. Rooted in cognition, motivation affects both the activation and the persistence of behavior. Expectancy is an individual's belief that his or her own behavior will lead to certain outcomes so it influences the initiation of behaviors, the amount of effort expended, and the length of time an individual persists against obstacles (Bandura, 1977). All three elements of the triadic reciprocality are evident.

Social cognitive theory identifies five capabilities that direct human behavior. Each person is imbued with the *symbolizing* capability to comprehend experiences in their environment and cognitively transform the information into new knowledge, and the *vicarious* capability to derive knowledge from observations of models (Pajares, 2002). Both capabilities guide future behaviors. The *forethought* capability allows individuals to plan a course of action, predict possible consequences, and consider alternatives to avoid behaviors that might be detrimental, while the *self-regulation* capability guides self-directed behavior and self-monitoring. A person's most pervasive belief is the *self-reflection* capability which helps individuals to make sense of their own experiences, to examine their own cognitive and self beliefs, and to adapt both thinking and behavior (Pajares, 2002).

Self-efficacy, the core of social cognitive theory, drives all human behavior. By definition, "perceived self-efficacy is people's belief in their capability to perform in ways that give them control over events that affect lives" (Bandura, 2000a, p. 212). An individual's efficacy beliefs are based on four sources of information: mastery experiences, vicarious experiences, social persuasion, and emotional states (Bandura, 1977). Incoming sources of information can come from direct, vicarious, and symbolic sources. The precepts of triadic reciprocality and imbued capabilities are reflected in these sources of information, and thus, in

the core concept of self-efficacy beliefs.

Teachers' Sense of Efficacy

Tschannen-Moran and Woolfolk Hoy (1998; 2001; 2007), the preeminent researchers in the area of teacher self efficacy, developed an instrument to measure the efficacy beliefs of classroom teachers. They define a teacher's sense of efficacy as "a future-oriented belief about the level of competence a person expects he or she will display in a given situation" (2001, p. 787). The Teacher Sense of Efficacy Scale produced three factors: efficacy for instructional strategies, efficacy for classroom management, and efficacy for student engagement. Research has shown that beliefs about self efficacy are highly correlated with behavioral change and that self efficacy can be "an excellent predictor of behavior" (Pajares, 2002, para. 35).

Beliefs are more influential to an individual's cognitive thoughts, emotional states, and behaviors than knowledge because knowledge is actually rooted in beliefs (Pajares, 1992). As individuals become comfortable with their beliefs, the beliefs actually become the "self." A teacher's belief system is based on personal experiences and generalizations. As experience increases, personal judgments become "routinized and automatic" (Tschannen-Moran et al., 1998, p. 234) so it is critical to address efficacy beliefs early in a teacher's career when the beliefs are most pliable (Tschannen-Moran & Woolfolk Hoy, 2007). Skill development, novel tasks, and personal performance experiences can influence a change in beliefs (Usher & Pajares, 2008; Wood & Bandura, 1989).

People with a strong sense of efficacy view challenges as tasks to be mastered, they are task-diagnostic, and they anticipate "success scenarios." In contrast, people with a low sense of efficacy usually avoid challenging tasks because they feel threatened, they are self-diagnostic,

and they expect “failure scenarios” (Bandura, 1993, p. 118). Based on their personal efficacy beliefs, teachers have more confidence in their ability to create positive results than to prevent negative results (Tschannen-Moran et al., 1998). Wheatley (2005) suggests that “teachers who believe they can teach well are also likely to believe that their students can learn well” (p. 151). Overall, a teacher’s personal sense of efficacy has a compelling effect on their level of professional commitment (Tschannen-Moran et al., 1998).

Methodology

Research Questions

The primary research questions that ground this study are (1) Do teachers with college of education training express higher self-efficacy beliefs than teachers with alternative certification training? (2) Do experienced and expert teachers express higher self-efficacy beliefs than novice teachers?

Participants

The participants in the research study are classroom teachers from ten high schools in Brevard County, Florida. A stratified random sampling procedure was be used to draw the sample. The random sample consisted of 298 participants from a total population of 820 high school teachers in the county.

Procedures

A questionnaire was administered to identify teachers’ sense of efficacy about their own

classroom teaching. An analysis of the teachers' responses helped clarify the explicit self-efficacy beliefs expressed by (1) the group of teachers with traditional college of education training and the group of teachers with alternative certification training and (2) the group of novice teachers with three or less years of teaching experience, the group of experienced teachers with four to nine years of teaching, and the group of expert teachers with ten or more years of teaching. These responses helped to illuminate the level of teachers' sense of efficacy according to type of teacher training and years of experience.

CHAPTER TWO: LITERATURE REVIEW

Social Cognitive Theory

Bandura's (1977) social cognitive theory posits that cognitive processes mediate changes in behavior and that they are responsible for both the acquisition and retention of new patterns of behavior. The development of human behavior results from observing models and then forming symbolic conceptions of the new behavior patterns. At a later time, the symbolic constructions direct the performance of new behaviors. Both the social environment and an individual's cognitive processes are necessary for behavioral change. The responses acquired from the performance and then stored symbolically are a "major aspect of learning" which are afterward "refined through self-corrective adjustments" (Bandura, 1977, p. 192).

A major tenet of social cognitive theory is reciprocal determinism (Bandura, 2000b; Pajares, 2002; Schunk & Pajares, 2005; Schunk & Zimmerman, 2006; Tschannen-Moran et al., 1998; Tschannen-Moran & Woolfolk Hoy, 2007). The interaction of (1) personal factors such as cognition, affect, and biological events, (2) behavior, and (3) environment create a triadic reciprocality (Schunk & Pajares, 2005). Each of these factors must be examined within the triadic relationship. Each factor is linked to the others, thus all three factors are requisite for changes in behavior. Pajares (2002) explains that " how people interpret the results of their own behavior informs and alters their environments and the personal factors they possess which, in turn, inform and alter subsequent behavior" (para. 2).

Included in the personal factor of reciprocal determinism are Bandura's

conceptualizations of agency, motivation, and expectancy. These are reflected in a person's beliefs about their own imbued capabilities to learn and perform new behaviors based on the sources of information that are received. Finally, at the core of social cognitive theory are self-efficacy beliefs which "touch virtually every aspect of people's lives" (Pajares, 2002, para. 14).

Agency, Motivation, and Expectancy

Individuals exercise "some level of control over their own lives" through personal agency (Goddard, Hoy, & Woolfolk Hoy, 2004, p. 4). Agents are proactive in their own development, they exercise control over their own lives, and are both products and producers of their own environments (Bandura, 1993; Schunk & Pajares, 2005; Tschannen-Moran et al., 1998). Another key to personal agency is self-efficacy beliefs because of their influence over motivation and behavior (Usher & Pajares, 2008).

According to Bandura (1977), motivation is rooted in cognition since it affects the activation and persistence of behavior. Individuals create cognitive representations of future behaviors and likely outcomes that motivate their current behaviors. When behaving in a specific manner produces expected benefits, then the behaviors are reinforced. However, when the outcome is different from the expectations, then people give up. Self-efficacy influences behaviors both directly and indirectly through the goals individuals set for themselves and their commitment to those goals (Wood & Bandura, 1989).

Expectancy is an individual's estimate that his or her behavior will lead to certain outcomes (Bandura, 1977). Mastery expectations influence the initiation of a behavior, how much effort is expended, and how long an individual will persist against obstacles. Stronger self-efficacy beliefs will activate greater effort. However, expectancy is also shaped by personal

judgments of successful performance. Although a person might believe that "certain behaviors will produce particular outcomes,… if they do not believe they can perform the necessary actions, they will not initiate the relevant behaviors or… will not persist in those behaviors" (Guskey & Passaro, 1994, p. 629).

Thus, the personal factors, behavior, and environment in reciprocal determinism are intimately connected to an individual's sense of agency, to his or her motivation to perform a behavior, and to the outcome he or she expects. In addition, self-efficacy beliefs are tied to agency, motivation, and expectancy because they direct personal goals, effort, and perseverance. Those with a strong belief exert more effort in the face of challenge, while those with self doubts tend to quickly slacken their efforts (Bandura, 1993).

Capabilities

A further conceptualization within Bandura's (1977; 2000b) social cognitive theory is the capabilities that provide individuals with the cognitive ability to determine their own actions (Pajares, 2002). Each person is imbued with a symbolizing capability, vicarious capability, forethought capability, self-regulation capability, and self-reflection capability (Bandura, 2000b; Pajares, 2002). Bandura (1977) believes that "expectations alone will not produce desired performance" if an individual is lacking in these capabilities (p. 194). Furthermore, individuals are fully capable of performing behaviors yet they may not carry through with the behavior because they do not have the incentive.

The capability to symbolize events offers human beings the cognitive means to comprehend their environment, create plans of action, solve problems, use forethought, reflect on those thoughts, and communicate with others (Pajares, 2002). Symbols allow individuals to

understand both personal and vicarious experiences and then cognitively transform that information into new knowledge that can guide their future behaviors (Bandura, 2000b).

Vicarious capabilities are derived from observing models. Bandura (2000b) purports that all behavioral, cognitive, and affective learning that an individual personally experiences "can be achieved vicariously by observing people's actions and its consequences for them" (p. 329). Vicarious observations are symbolically coded and available to direct future performances. As a result, individuals can avoid the process of trial and error learning by relying on social modeling (Bandura, 2000b; Pajares, 2002). Although some learning occurs unintentionally from observing models, generally persons deliberately attend to and retain knowledge gained from models and then use it to produce the desired behaviors themselves. If the performance elicits positive results, the individual will be motivated to adopt that behavior (Pajares, 2002).

The capability of forethought is uniquely human. Forethought allows human beings to plan a course of action, predict the possible consequences of their actions, and set goals for themselves, as well as to consider alternative strategies and avoid behaviors that might be detrimental (Bandura, 2000b; Pajares, 2002). Although future events do not actually exist, humans can cognitively represent their future behaviors in order to motivate and regulate their own actions. As such, forethought affords people the capability to control their environment.

Human beings are more than simply "knowers and performers guided by outcome expectations" because they have the capability of self-regulation (Bandura, 2000b, p. 330). Humans' beliefs in their own capabilities are a central element of personal agency which, in turn, guides self-directed behavior and self-monitoring of their performance (Bandura, 1991). Self-efficacy beliefs govern the goal-setting aspect of self-regulation capabilities. The beliefs

determine the choices a person makes, the amount of effort they exert, and how long they persevere. People who judge themselves as capable will set higher goals and will remain strongly committed to them (Bandura, 1991; Bandura, 1993). Self-regulation is revealed as an individual cognitively reviews his or her own self-satisfaction or self-dissatisfaction with performances. This evaluative function of self-regulation becomes a motivator for future behavior (Bandura, 2000b).

Self-reflection is a person's most pervasive belief in their own capabilities. As a prominent component of social cognitive theory, self-reflection helps individuals make sense of their own experiences and allows them to examine their own cognitive and self beliefs in order to adapt their thinking and behavior (Pajares, 2002). Personal efficacy beliefs provide a sense of emotional well-being, directly affecting how a person thinks, feels, and acts. Self-reflection shapes "thought patterns [that] are self-hindering or self-enhancing" and leads to a sense of personal agency (Bandura, 2000b, p. 331).

Sources of Information

As the core of social cognitive theory, self-efficacy drives all human behavior. Individuals structure their self-efficacy beliefs based on four sources of information: mastery experiences, vicarious experiences, social persuasion, and emotional states (Bandura, 1977; Bandura, 2000a; Goddard, Hoy, & Woolfolk Hoy, 2000; Pajares, 2002; Schunk & Pajares, 2005; Tschannen-Moran et al., 1998; Tschannen-Moran & Woolfolk Hoy, 2007). The conception of triadic reciprocality is reflected in these sources of information because incoming information can come from direct, vicarious and symbolic sources. As such, personal factors, behavior, and the environment all interact as information is gleaned from various sources. Bandura (1977)

warns that a “distinction must be drawn between information contained in environmental events and information as processed and transformed by the individual” (p. 200).

Mastery experiences are the most powerful source of efficacy information (Goddard et al., 2004). Successful performance of a behavior will raise efficacy beliefs and suggest proficiency in future performances, while failures will lower efficacy beliefs and deter future attempts (Bandura, 1977; Goddard et al., 2004).

Vicarious experiences can lead to increased efficacy beliefs if the source of information is believable. The model must be perceived as credible, trustworthy, and accomplished. Vicarious experiences depend heavily upon social comparison and will have more impact if the model is similar to the individual. Efficacy can also increase when a person sees another person perform a threatening activity without negative consequences (Bandura, 1977).

Social persuasion as a source of information can be words of encouragement prior to performing a behavior or can be feedback about a behavior that has been performed (Goddard et al., 2004). Social persuasion is a weak source of information because it is not an authentic personal experience (Bandura, 1977).

Bandura (1977) maintains that emotional arousal results from demanding situations. Although “high arousal usually debilitates performance,” sources of information such as excitement can offer valuable information in forming personal efficacy beliefs (Goddard et al., 2004).

Self-Efficacy

The principle of observational learning from models was established in 1963 with the publication of Bandura and Walters’ *Social Learning Theory and Personality Development*. The

publication of “Self-Efficacy: Toward a Unifying Theory of Behavioral Change” in 1977 established Bandura’s conviction that he had identified an essential element that was missing from his own theory: self-beliefs (Pajares, 2002). By definition, “perceived self-efficacy is people’s belief in their capability to perform in ways that give control over events that affect lives” (Bandura, 2000a, p. 212). Therefore, self-efficacy beliefs influence and are influenced by the triadic reciprocality of personal factors, behavior, and environment; by personal agency and motivation; and by the capabilities a person possesses. Self-efficacy beliefs are developed over time and with multiple experiences. Once established, they are highly predictable and quite resistant to change (Pajares, 2002).

An individual’s belief in his or her ability to perform a behavior and the actual performance of the behavior are not often entirely matched because what a person believes carries more power than what is objectively true (Pajares, 2002). Additionally, having the requisite ability to perform a behavior does not necessarily insure that an individual will perform competently (Wheatley, 2005). A person who is skilled and feels efficacious may choose not to perform a behavior because they lack the motivation to do so, they do not have resources at their disposal, or they are restrained by social constraints (Pajares, 2002).

Individuals generally choose tasks in which they feel skilled and confident; thus, they perform tasks in which they feel efficacious. Self-efficacy beliefs dictate how much effort an individual dedicates to a task, how long his or she will persevere in the face of difficulty, and how resilient he or she will be after a failure. A person with high self-efficacy beliefs is likely to persist longer at a particular task which will lead to increased performance which will then raise his or her sense of efficacy. On the other hand, a person with low self-efficacy beliefs will give

up more quickly which often leads to failure which then lowers his or her confidence (Pajares, 2002).

Consistently, people with strong self-efficacy beliefs purposely choose tasks that offer a challenge. When people judge themselves to be highly-efficacious, they perceive difficult tasks as challenges to master rather than as threats to be avoided (Dweck, 2000; Pajares, 2002) and they attain a sense of satisfaction from mastering a challenge (Bandura, 1991). Furthermore, people who have strong self-efficacy beliefs recover more quickly after failures and attribute their setbacks to their own lack of effort or lack of skill. Those who have weak self-efficacy beliefs usually exhibit anxiety, stress, and depression, and they blame their failure on external sources. These individuals often fall victim to a self-fulfilling prophecy (Pajares, 2002).

Tschannen-Moran and Woolfolk Hoy (2007) connect self-efficacy beliefs to Bandura's social cognitive theory through effort, persistence, and resilience, whereas Shaughnessy (2004) brings together the precepts of attribution, self-regulation, and goal theory as a way of understanding teachers' motivation and learning. It is possible then to make an informed inference about a teacher's performance in the classroom based on his or her expressed beliefs about self-efficacy.

Teachers' Sense of Efficacy

In an interview with Shaughnessy (2004), Woolfolk Hoy confirms the ever-growing importance of research and theory related to the self. She reports that in 1970 nearly one out of every twenty publications in the field of psychology concerned the self, but the ratio had increased to almost one in seven by 2000. Pajares (2002) indicates the level of interest in the construct of self-efficacy: a search in academic databases in the year 2000 produced over 2500

articles. Self efficacy is different from other models and theories about the self because it is exhibited within a certain domain (Bandura, 1977) and is usually "specific to a particular task" (Goddard et al., 2004, p. 4). As the preeminent researchers in the area of teacher self efficacy, Tschannen-Moran and Woolfolk Hoy (2001) define self efficacy as "a future-oriented belief about the level of competence a person expects he or she will display in a given situation" (p. 787). Research has shown that beliefs about self efficacy are highly correlated with behavioral change and that self efficacy can be "an excellent predictor of behavior" (Pajares, 2002, para. 35).

More specifically, *teacher* efficacy is defined by Fuller (1982) as a person's "perceived expectancy of obtaining valued outcomes through personal effort" and defined by Dembo and Gibson as the "extent to which teachers believe they can affect school learning" (cited in Wheatley, 2005). Current research defines teacher self efficacy as the "extent to which the teacher believes he or she has the capacity to affect student performance" (Goddard et al., 2000; Tschannen-Moran et al., 1998). Unfortunately the term "teacher efficacy" is often confounded with the term "teacher effectiveness" (Wheatley, 2005,p. 748). It is important to realize the distinction between the two terms and to not assume that a teacher's sense of personal efficacy necessarily indicates his or her level of effectiveness in the classroom (Shaughnessy, 2004). At the same time, it is hypothesized that teaching effectiveness is built upon a teacher's beliefs and attitudes about their own teaching and the students they work with (Metzger & Wu, 2008).

Belief Systems

Pajares (1992) explains beliefs and belief systems according to Rokeach's (1968) definition: all *beliefs* have cognitive, affective, and behavioral components which are influenced

by an individual's knowledge, emotional arousal, and actions. Further, clusters of beliefs that are holistically organized become *attitudes*. Evaluation, comparison and judgment become *values*. Finally, all of these elements combine to create an individual's *belief system*. Within this schema-like network, some beliefs become "core" and are then difficult to alter. Pajares (1992) refers to Nespor's (1987) view of beliefs systems in which they can be disputable, inflexible, and dynamic and, surprisingly, "do not even require internal consistency within the belief system" (p. 311).

Beliefs are much more influential to an individual's cognitive thoughts, emotional states, and behaviors than knowledge because knowledge is actually rooted in beliefs (Pajares, 1992). As people become more comfortable with their beliefs, the beliefs actually become the "self." Consequently, individuals tend not change their beliefs "when it is logical or necessary for them to do so" because the very power of the beliefs overshadow any contrary evidence and even reality (Pajares, 1992, pp. 317-318). Beliefs and belief systems, therefore, are quite consistent with social cognitive theory and its core concept of sense of efficacy.

Changes in Beliefs

Teachers' beliefs arise from their preconceptions and their own implicit theories. Much of a teacher's belief system is based on personal experience, generalizations, and their own prejudices (Pajares, 1992). Efficacy beliefs are most pliable during the early stages of learning (Tschannen-Moran & Woolfolk Hoy, 2007). Personal judgments about efficacy become "routinized and automatic" as experience increases, but presenting novel challenges can "elicit a reevaluation of efficacy" (Tschannen-Moran et al., 1998, p. 234). Changes in a teacher's beliefs occur gradually because individuals need feedback and encouragement to get them through the

"initial slump" in their level of confidence (Tschannen-Moran et al., 1998). Therefore, it is advisable to address and adapt efficacy beliefs early in an individual's teaching career in order to initiate and direct appropriate changes (Tschannen-Moran et al., 1998).

Once efficacy beliefs are established, it sometimes takes a "shock" to initiate reassessment and change (Bandura, 1977). Bandura maintains that people tend to "hold their efficacy beliefs in a provisional status, testing their newly acquired knowledge and skills before raising their judgments of what they are able to do" (cited in Tschannen-Moran et al., 1998, p. 236). Skill development, novel tasks, and especially performance experiences influence a change of beliefs (Usher & Pajares, 2008; Wood & Bandura, 1989). Pajares (1992) warns that a change in beliefs is the "last alternative" (p. 321). Nevertheless, Huberman (1989) advises that for some people, the belief systems stabilize early, while in other people they stabilize later or never at all.

It is difficult to determine whether changes in a teacher's beliefs precede changes in his or her practice or whether the beliefs follow the changes (Richardson & Placier, 2001). Those teachers who "tinkered" with classroom-level changes were more likely to be satisfied with their own classroom practice, and teachers with a higher self efficacy belief were more willing to adjust and alter their classroom practice (Richardson & Placier, 2001). Moving away from established routines requires teachers to "let go" of their beliefs and to "unlearn" long-held beliefs while temporarily enduring the ambiguity of practice, efficacy, and beliefs (Bransford, Derry, Berliner, Hammerness, & Beckett, 2005, p. 51). Even though it would seem that teaching experience would correlate with increased self efficacy beliefs (Tschannen-Moran & Woolfolk Hoy, 2007), beliefs are stable so it is more difficult to initiate changes in beliefs or behavior in experienced teachers (Tschannen-Moran et al., 1998).

Effort and Expectancy

The effort that an individual expends on a particular activity or task is generally determined by his or her perceived level of efficacy. Individuals with strong efficacy beliefs exercise a certain amount of control over their environment while those who are "inefficacious" are unlikely to cause any change in their environment (Bandura & Wood, 1989). Interestingly, judgment about efficacy has more to do with perceptions of possible competence rather than an actual level of competence (Woolfolk Hoy & Burke-Spero, 2005). Thus, self-beliefs can be either self-aiding or self-impeding (Bandura & Wood, 1989).

People with a strong sense of efficacy view challenges as tasks to be mastered and they are task-diagnostic. They anticipate "success scenarios." Conversely, people with a low sense of efficacy will usually avoid challenging tasks because they feel threatened and self-diagnostic. These people anticipate "failure scenarios" (Bandura, 1993, p. 118). Generally, a person's performance is enhanced when he or she overestimates his or her true capabilities (Goddard et al., 2004).

For teachers, self efficacy may be affected by the subject area in which they teach since some disciplines are considered more challenging than others. Also different class sizes, different grade levels, and different academic levels of the students that are taught during the school day may provide unique challenges. These circumstances will produce distinct perceptions of personal self efficacy (Wheatley, 2005). Based on personal efficacy beliefs, teachers have more confidence in their ability to create positive results than to prevent negative results (Tschannen-Moran et al., 1998).

Doubts about personal self efficacy might encourage greater motivation to learn and

grow, more reflection about one's teaching, and an incentive to collaborate with peers (Woolfolk Hoy & Burke-Spero, 2005). However, research has shown that teachers who have lower efficacy beliefs lack the sense of "withitness" necessary to teaching (Gibson & Dembo, 1984), and those who left the profession had significantly lower perceptions of self efficacy (Tschannen-Moran et al., 1998). Sadly, Tschannen-Moran and Woolfolk Hoy (2007) found that teachers who begin their careers with weak perceptions of self efficacy usually give up and leave the profession unless they can find ways to improve their performance and improve their sense of efficacy.

Efficacy about Teaching

Wheatly (2005) suggests that "teachers who believe they can teach well are also likely to believe that their students can learn well" (p. 151). Teachers with a high sense of personal efficacy most often have students who are engaged and show greater achievement (Dembo & Gibson, 1985; Shaughnessy, 2004; Tschannen-Moran & Woolfolk Hoy, 2007). Initially, when teachers with a firm sense of efficacy attempt new practices, their personal efficacy may decline, but it generally rebounds when they see that the new practices are effective (Tschannen-Moran et al., 1998). These teachers spend more time in planning and organization and are more open to new ideas (Tschannen-Moran & Woolfolk Hoy, 2001). Conversely, those teachers who have a low sense of efficacy and do not expect to be successful will typically "put forth less effort in preparation and delivery of instruction" and will "give up easily at the first sign of difficulty" (Tschannen-Moran & Woolfolk Hoy, 2007, p. 945).

Self efficacy beliefs are especially potent for novice teachers. Teachers with a low sense of efficacy are generally custodial in their approach to teaching and rely mostly on extrinsic motivators and punishment. On the other hand, those with a strong sense of efficacy beliefs are

supportive of their students' intrinsic and academic interests (Bandura, 1993). Novices usually enter teaching with high expectations about the impact they will have on their students, but they experience "reality shock" when they realize it is more difficult than they had expected (Tschannen-Moran & Woolfolk Hoy, 2007). Novice teachers find both student feedback and encouragement from peers to be a potent source for increasing self efficacy (Woolfolk Hoy & Burke-Spero, 2005). Yet, after years of experience, new teachers often came to understand that their own skills and knowledge did not necessarily insure that their students were learning (Shaughnessy, 2004).

A teacher's efficacy beliefs are related to student achievement, motivation, and even students' own sense of efficacy (Tschannen-Moran & Woolfolk Hoy, 2001). In fact, student achievement in reading is correlated with positive teacher self efficacy (Gibson & Dembo, 1984). Teachers' beliefs are related to the effort invested in teaching and the goals they set for themselves (Tschannen-Moran & Woolfolk Hoy, 2001). Observing and collaborating with a respected peer model impacts a teacher's level of competence (Tschannen-Moran et al., 1998). On the whole, an individual's sense of efficacy has a compelling effect on their level of professional commitment (Tschannen-Moran et al., 1998).

Early Research

For the past few decades, the concept of teacher efficacy has been measured using quantitative scales and surveys, with the impetus in the work of Rotter (1966) and more recent work based on Bandura's self efficacy theory (Shaughnessy, 2004). Rotter investigated locus-of-control and how an individual accepts responsibility for events, whereas Bandura focused on efficacy and expectations (Guskey & Passaro, 1994). The RAND Corporation's *Change Agent*

Survey in 1978 found that the "most powerful variable in predicting program implementation success" was efficacy (Guskey & Passaro, 1994, p. 628). Although only two items on the entire RAND questionnaire addressed efficacy, the findings were so substantial that they created a new line of investigation. The RAND item #1 stated, "when it comes right down to it, a teacher really can't do much because most of a student's motivation and performance depends on his or her home environment" and the RAND item #2 stated, "If I try hard, I can get through to even the most difficult or unmotivated students" (Tschannen-Moran et al., 1998, p. 204). As a result, the RAND researchers looked at efficacy beliefs as "the extent to which teachers believed that they could control the reinforcement of their actions" (Tschannen-Moran & Woolfolk Hoy, 2001, p. 784). The sum of both RAND items was termed teacher efficacy (TE) while the responses to item #1 established general teacher efficacy (GTE) and the responses to item #2 established personal teacher efficacy (PTE) (Tschannen-Moran & Woolfolk Hoy, 2001).

Early Instruments

In response to the RAND study, in 1981 Guskey developed a 30-item instrument examining two alternatives: events caused by a teacher and events that occurred because of factors outside the immediate control of the teacher (Tschannen-Moran & Woolfolk Hoy, 2001). Guskey's work was consistent with Weiner's attribution theory (Tschannen-Moran et al., 1998) and with the model of teaching efficacy and personal efficacy (Guskey & Passaro, 1994). Studies based on Guskey's instrument concluded that the responses of prospective teachers and experienced teachers differed in the level of efficacy, but were not statistically significant (Guskey & Passaro, 1994).

Also in 1981, Rose and Medway created a 28-item instrument called the Teacher Locus

of Control which asked teachers to determine whether student success or failure was due to "positive outcome internal to the teacher" called I+ or a "failure situation internal to the teacher" called I- (Tschannen-Moran & Woolfolk Hoy, 2001). Soon after in 1984, the vignettes created by Ashton and Webb asked teachers to determine whether a scenario described a teacher's belief in his or her ability – "these kids can't learn" – or a sense of incompetence – "I can't motivate these kids" (Dembo & Gibson, 1985, p. 175). Neither of these instruments gained popularity with researchers.

Research conducted by Gibson and Dembo (1984) asked: "What are the dimensions of teacher efficacy?" based on a factor of a teachers' *own* sense of personal responsibility and a factor of belief in *any* teachers' efficacy to bring about change (p. 570). The 30-item measurement focused on personal teacher efficacy (PTE) and general teacher efficacy (GTE) (Guskey & Passaro, 1994) in an attempt to find the "optimal level of specificity" (Tschannen-Moran & Woolfolk Hoy, 2001). For example, a teacher may feel confident working with one particular group of students in one subject area, but feel incompetent with a different group of students in another subject area. Further, preservice teachers indicated a lower level of personal efficacy compared to inservice teachers, indicating that the preservice teachers were not very confident in their teaching abilities (Dembo & Gibson, 1985). The Dembo and Gibson instrument remains popular among researchers, yet Tschannen-Moran and Woolfolk Hoy (2001) point out that a key weakness in the instrument is the instability of their factor structure.

Two later studies have had little impact on self efficacy research or instrument development. In 1990, Greenwood, Olejnik and Parkay used the RAND items to produce a four-pattern view of teachers' sense of efficacy: I can, teachers can, I can't or teachers can't

(Tschannen-Moran & Woolfolk Hoy, 2001). In 1992, Raudenbush, Rowen, and Cheong used a single question to measure efficacy: “To what extent do you feel successful in providing the kind of education you would like to provide for this class” (Tschannen-Moran & Woolfolk Hoy, 2001, p. 791).

One of the most influential measures was created by Bandura (undated). His scale included 30 items which factored into seven subscales: efficacy to influence decision making, efficacy to influence school resources, instructional efficacy, disciplinary efficacy, efficacy to enlist parental involvement, efficacy to enlist community involvement, and efficacy to create a positive school environment (Tschannen-Moran & Woolfolk Hoy, 2001, p. 791). This instrument has been used as the basis for numerous studies, including those of Tschannen-Moran and Woolfolk Hoy, but the lack of information about reliability and validity has limited its use.

Ohio State Teacher Efficacy Scale

Presently, the most widely used instrument to measure teachers’ sense of efficacy is the Teacher Efficacy Scale created by Woolfolk Hoy, Tschannen-Moran, Hoy and their colleagues and students at Ohio State University. Tschannen-Moran and Woolfolk Hoy (2001) were dissatisfied with the instruments that were available because some, like the Ashton vignettes, were too general and some, like Bandura’s scale, were too specific. They also did not agree conceptually with the two-factors used in the Gibson and Dembo instrument (Shaughnessy, 2004). Ideally, they wanted to look at the “contextual variables in their model of teacher self-efficacy” (Tschannen-Moran & Woolfolk Hoy, 2007, p. 945) by assessing the “wide range of activities and tasks [teachers] are asked to perform” (Tschannen-Moran & Woolfolk Hoy, 2001, p. 795) .

The new instrument was developed in order to address "the tasks that teachers thought were central to good teaching – not... routine tasks like attendance that do not really connect to student learning" (Tschannen-Moran & Woolfolk Hoy, 2001, p. 792). The two researchers and eight of their graduate students selected items from Bandura's instrument and created new items to address additional areas such as assessment. To determine the generalizability, reliability, and validity of the new instrument, three studies were conducted. The results of the first study narrowed the number of items from 52 to 32; the second study reduced the number to 18 items in three sub-scales; the third study introduced 18 additional items (Tschannen-Moran & Woolfolk Hoy, 2001). Based on these studies, a three-factor structure was developed: efficacy for instructional strategies, efficacy for classroom management, and efficacy for student engagement. The eight items that loaded the highest on each factor comprised the 24-item long form and then a 12-item short form was created.

Data analysis by Tschannen-Moran, Woolfolk Hoy and colleagues (2001) of the responses to the 24-item scale produced three factors which loaded from 0.50 to 0.78. The reliability of the new instrument ranged between 0.87 and 0.91 for the three subscales. The intercorrelations between the subscales ranged from 0.58 to 0.70, while the means ranged from 6.71 to 7.27 (Tschannen-Moran & Woolfolk Hoy, 2001). Further, the construct validity of the new instrument was positively related to both the RAND items and the PTE and GTE of the Gibson and Dembo instrument (Tschannen-Moran & Woolfolk Hoy, 2001).

The researchers are confident that their instrument is superior to others in its ability to measure teachers' sense of efficacy. The success of the Teacher Efficacy Scale is evident through its attention to the broad range of teacher capabilities and the identification of three

dimensions of efficacy that "represent the richness of teachers' work lives and the requirements of good teaching" (Tschannen-Moran & Woolfolk Hoy, 2001, p. 801).

Collective Efficacy

People do not live alone. One aspect of Bandura's (1977) social cognitive theory is that people interact as a group within their environment. Collective self efficacy can be defined as individuals working together "to secure what they cannot accomplish on their own" (p. 213) and the combined effects of those who believe "they can work together to produce a desired effect" (Goddard et al., 2004, p. 5). Collective efficacy, like individual efficacy, involves levels of effort, persistence, and achievement, as well as shared thoughts and stress levels (Goddard et al., 2000). Also, collective efficacy involves vicarious learning, self-reflection, and self-regulation of each individual (Goddard et al., 2000). As such, the individuals within the collective groups are both products of and producers of their environment and the social system within which they function (Pajares, 2002).

Collective teacher efficacy is the group-level belief in the capability "to organize and execute courses of action required to produce given levels of attainment" (Goddard et al., 2000, p. 482). Teachers in highly effective schools had stronger efficacy beliefs than teachers in less effective schools (Guskey & Passaro, 1994). The beliefs of individual teachers concerning the efficacy of the school as a whole was just as predictive of school achievement as the teachers' beliefs in their own personal efficacy (Tschannen-Moran et al., 1998). In addition, self-efficacy beliefs are lower in schools where teachers dwell on the difficulties of educating students, whereas positive feelings of self-efficacy exist in schools where teachers work collaboratively to address learning (Tschannen-Moran et al., 1998).

Teacher Training

With the passage of the *No Child Left Behind Act* (NCLB), a new emphasis on teacher training has caused a controversy between policy makers and educators. Feiman-Nemser (2001) suggests that there is a growing consensus among school reform advocates that "the quality of our nation's schools depends on the quality of our nation's teachers" (p. 1013). What the nation's students learn in school is directly linked to what teachers know and how they teach. In 1996, The National Commission on Teaching and America's Future decided that "what teachers know and can do makes the crucial difference in what teachers can accomplish" (cited in Feiman-Nemser, 2001, p. 1031). Thus, the focus on school reform has shifted from *student learning* to *teacher teaching*. Brewer (2003) quotes Rod Paige, former Secretary of Education, as he explains the emphasis of NCLB: "We know that a high-quality teacher is the single most significant factor on how well students achieve" (p. 3).

The new prominence of teacher training highlighted another problem in America's schools: a shortage of qualified teachers. In order to ensure a sufficient number of teachers, new training procedures were envisioned. In Texas, Delia Stafford spearheaded an alternative certification route to provide "a new type of teacher that was uniquely suited to work in urban schools with at risk students" (Stafford & Shaughnessy, 2006, p. 497). Although the original alternative certification programs were "constantly scrutinized," Stafford laments that there are few quality assurance regulations in place for current programs (p. 498). Within a short time, forty-five states had developed alternative certification programs (Brewer, 2003). However, it was soon determined that there was not actually a teacher shortage, but a shortage in the number of teachers willing to work in large urban districts (Stafford & Shaughnessy, 2006). Despite this

realization, the number of alternative certification programs continues to increase.

As alternative certification programs became more pervasive, the controversy over teacher training intensified. Two distinctly different "philosophical camps" emerged with Arthur Wise leading the National Council of Accreditation of Teacher Education (NCATE) and policy analyst Kate Walsh supporting a report by the Abell Foundation (Brewer, 2003). Opponents of training teachers through alternative certification routes viewed the programs as "a threat to professionalism" by placing unprepared teachers in classrooms, thus, diminishing teacher quality and becoming a "disservice to the neediest students, who end up with the least prepared teachers" (Humphrey & Wechsler, 2006, para. 1). Advocates boasted about their "effective way to put bright and talented individuals into classrooms without forcing them to jump the 'meaningless hurdles' of traditional teacher preparation" as well as the benefit of diversifying the teacher workforce and alleviating teacher shortages (Humphrey & Wechsler, 2006, para. 1).

Determining the differences between teachers with a college of education background and teachers from alternative training routes has become progressively more difficult. The variables between program types are complex, standardized definitions have not been created, and each program is unique in the quality and rigor of its curriculum (Tournaki et al., 2009). There is often more variation within type of training programs than across the programs (Humphrey & Wechsler, 2006). There is considerable variety in the purpose, the content, and the structure of alternative certification programs, while they are usually consistent in requiring coursework, mentoring opportunities, and then licensure exams (Suell & Piotrowski, 2006). In spite of the variety and differences in traditional and alternative programs of teacher training, both share the belief that good teachers are a key to successful schools (Smith, 2008).

Traditional Training Programs

There is much support for requiring classroom teachers to complete their training through a college of education program. Effective training programs begin with content knowledge and then add the critical component of pedagogical knowledge (Darling-Hammond & Haselkorn, 2009). It is essential for teachers to find a balance between content knowledge – the "what" – and pedagogical knowledge – the "how" – because both are necessary for successful teaching (Brewer, 2003). Berliner (1991) insists there are three essential sources of knowledge: content knowledge such as a teacher's understanding of curriculum, pedagogical content knowledge which enables a teacher to transform content into meaningful learning for students, and pedagogical knowledge about classroom management, assessment, and motivation.

There is evidence of successful achievement in traditional training programs because individuals who graduate from NCATE-accredited programs pass their licensing tests at significantly higher rates than those who have not completed a teacher education program (Darling-Hammond, Chung, & Frelow, 2002). Brewer (2003) likens teaching to other careers: just as a pilot cannot learn to fly a plane while it is in the air and a surgeon does not operate alone during his first surgery, a teacher needs a quality preparation program.

Alternative Training Programs

While there are advantages to both traditional and alternative training programs, most of the debate about effectiveness centers on the weaknesses in the alternative routes. Berliner (1988) fears teachers from alternative certification programs who do not have pedagogical knowledge are "severely handicapped" when assigned to hard-to-teach students. Baines (2006) laments that too frequently the teachers from alternative certification programs are not required

to “set foot in a K-12 school” during their training (p. 328). Darling-Hammond and Haselkorn (2009) also acknowledge that practice teaching alongside a veteran teacher is usually omitted from alternative route programs. Whiting and Klotz (1999) describe this type of training process as placing novice teachers into “shark infested waters with the expectation that they will be able to survive, without harming either the students or themselves” (p. 7).

Research shows that some of the well-designed alternative training programs produce strong teachers. However, evidence also shows that many new teachers from alternative programs believe themselves to be underprepared, that principals and colleagues see them as less competent, that they are not as effective with students, and that the attrition rate is much higher (Darling-Hammond & Youngs, 2002; Zientek, 2006). Entering a classroom without sufficient training can have detrimental effects on the students who will be “victims of inadequately prepared novices” as well as the new teacher who might struggle for years before he or she feels competent, or worse, realizes he or she is incompetent and leaves the profession (Darling-Hammond & Haselkorn, 2009). Additionally, research shows that teachers’ classroom experiences during the first few years of teaching are a strong predictor of teacher effectiveness (Hammerness et al., 2005). Therefore, comprehensive and rigorous training is essential because the students and the teachers “deserve an opportunity for success” (Whiting & Klotz, 1999, p. 8).

Importance of Teacher Training

In 1995 Bartell maintained that “no matter what initial preparation they receive, teachers are never fully prepared for classroom realities” (cited in Feiman-Nemser, 2001, p. 1026). Her observation is still accurate in today’s schools. Each teacher makes an estimated 1,300 judgments every day so the minute-by-minute process of decision-making is formidable

(Steadman & Simmons, 2007). Whether a novice or an experienced teacher is in the classroom, the challenge is to maintain the dynamic nature of teaching and learning while dealing with "the most salient aspect of a classroom – unpredictability" (Ritter & Hancock, 2007, p. 1208). To compound the situation, new teachers actually have two jobs: they have to teach and they have to "learn to teach" (Feiman-Nemser, 2001, p. 1026).

For some, the challenge is too great. Steadman and Simmons (2007) reported in 2007 that around 25% of novice teachers stay in the classroom for one or two years, and nearly 50% leave the teaching profession within their first five years. As such, the teacher shortage problem is not only about incoming teachers, but about attrition from those leaving the field. In 1999 Whiting and Klotz (1999) predicted that 2.2 million would be needed to fill teaching vacancies. It was estimated that by 2010 Florida would need an additional 162,000 teachers and paraprofessionals and would need 16,000 teachers per year for nearly a decade to compensate for retirement, attrition, and low college of education admissions (Suell & Piotrowski, 2006).

Despite these and other setbacks, the number of alternatively certified teachers is steadily increasing. In the 1990s California allowed 12,000 teachers into the classrooms on emergency permits but by 2001 there were more than 40,000, amounting to almost 14% of the teaching force (Darling-Hammond et al., 2002). During the 1997-98 school year there were 9,000 teachers in New York City with emergency licenses yet there were only 1,185 in the remainder of the state (Darling-Hammond et al., 2002). In 2006 Baines (2006) reported that nearly 1 in 5 teachers in California entered the profession through alternative routes and 1 in 4 new teachers in Texas and New Jersey were alternatively certified.

Although there seems to be no final answer to the controversy between training in a

college of education program or an alternative certification route, Humphrey and Wechsler (2006) insists that "the line between alternative and traditional certification is an illusion; the line between effective and ineffective novice teachers is real" (para. 13). As a member of President Obama's cabinet, Darling-Hammond has revised her once-polar view of teacher training. She predicts that Obama's education agenda is more strategic and "recognizes the importance of innovating toward success rather than regulating toward compliance" (Darling-Hammond, 2009, p. 216) Using lessons from both traditional college of education programs and from alternative certification programs can produce a synthesis that will ensure quality teachers in every classroom (Darling-Hammond & Haselkorn, 2009).

Novices and Experts

Elliot and Dweck (2005) propose that the everyday behavior of individuals is "energized… by the possibility of competence or incompetence" (p. 7). Berliner (1988) explains that considerable time is needed for an individual to develop "competence out of ignorance and expertise out of competence" (p. 27). Sternberg's (2005) definition is similar in that competent people must develop their abilities and experts must then develop their competencies. Glaser (1992) looks at expertise as a person's proficiency used to its highest potential. Hence, becoming an expert requires substantial effort and is not easily attained. In general, inexperience is equated to a novice status; however, experience does not necessarily equate to level of expertise (Berliner, 2001).

Early work on expertise is credited to Adrian de Groot (1965) and his work with the thinking patterns of both expert and novice chess players (Glaser, 1992). It is possible that 50,000 to 100,000 hours of practice in chess are needed to reach expert status (Bransford,

Brown, Cocking, Donovan, & Pellegrino, 2000). In further studies, Simon and Chase (1973) maintain that "ten or more years of full-time preparation" are needed for performance at an international level in chess, while Hayes (1981) and Bloom (1985) assert that a "decade of intensive preparation" is needed for international-level performance in sports and in the arts and sciences (cited in Ericsson & Smith, 1991, p. 7). It is reasonable to assume, therefore, that the learning needed to become an expert cannot and should not be rushed. Time is an essential element in expertise.

Expertise, however, is not reserved for a select few. Ordinary people are already experts in general areas of learning. For instance, the complex and time consuming process of becoming a skilled reader has been learned by innumerable people (Glaser, 1992; Posner, 1988). Anyone has a potential to become an expert in a particular domain if they dedicate themselves to learning the "large technical vocabulary" and remain motivated for long-term study (Posner, 1988, pp. xxxii-xxxv). Berliner (1988) concurs that becoming a distinguished expert requires a specific area of expertise. Even those who have attained the necessary level of competence may not be considered an expert. For example, the "expert first-year graduate… is still a far cry from the expert professional" (Sternberg, 1998, p. 17).

Experts

Experts can be identified based on a number of characteristics. Experts have an extensive knowledge base, they use their knowledge strategically, and solve problems more accurately than novices (Berliner, 2001; Bransford et al., 2000; Chi, 2006; Thompson, Licklider, & Jungst, 2003). Experts are able to search their memory and quickly retrieve relevant information (Berliner, 2001; Bransford et al., 2000; Chi, 2006; Ericsson, 1996). Because their knowledge and

behaviors have become automated (Ericsson, 1996), experts are more adaptive and fluid in their performance (Berliner, 2001). Berliner (2001) describes experts as "top down processors" who understand ambiguities and novices as "bottom up processors" who are confused by ambiguity (p. 464).

While experts excel in many areas, there are areas of weakness. Often experts are rigid and inflexible in their thinking and strategizing (Chi, 2006; Sternberg, 1996a). The term "expert blind spot" has been coined to describe experts who fail to realize that their knowledge is domain-specific and not necessarily known or understood by novices (Bransford et al., 2005, p. 48). Their extensive knowledge base sometimes causes them to gloss over or skip information that they take for granted (Bransford et al., 2005; Chi, 2006). Sternberg (1996b) notes that experts can become so sure of their own point of view that they cannot see things in a different light or change their ways of behaving; Chi (2006) calls this behavior "functional fixedness."

Berliner (2001) estimates it takes five or more years to develop expertise in teaching. He refers to Turner's 1995 study of exemplary teachers who said it takes "4.5 years to learn their trade" and "3-5 years until things that happen in the classroom no longer are surprising" (p. 479). Expert teachers have an extensive knowledge of their subject matter which is usually highly organized and connected to key concepts (Bransford et al., 2000). Expert teachers possess propositional knowledge – knowledge of the "that" – as well as procedural knowledge – knowledge of the "how" (Berliner, 1991). One of the goals of teaching expertise the automaticity of day-to-day knowledge and behavior which frees up the cognitive resources needed for higher level thinking and other classroom tasks. Perhaps 99 percent of a teacher's expertise results from the deliberate practice that develops into automaticity (Berliner, 2001).

Novices

The characteristics of a novice are often best seen as they contrast to those of an expert. The role of a novice teacher is to learn to teach. Although novice teachers are enthusiastic and confident, they generally feel lost and alone during their first years of teaching. Bransford and his colleagues (2000) stress Shulman's terminology: the expert learner becomes a novice teacher. What happens in the school setting has an enormous effect on the novice teacher's beliefs about his or her capabilities and about the knowledge and skills he or she brings to the classroom. Often what was taught and learned in teacher training programs is discrepant from the realities of teaching (Borko & Putnam, 1996).

While experts have a repertoire of teaching strategies at their disposal, novice teachers frequently lack the cognitive resources needed to comprehend, or even attend to, what is happening in the classroom (Berliner, 2001). Because novice teachers are concerned about how competent they appear in the classroom, they are in "survival" mode (Parsons & Fuller, 1974). In their earliest experiences, novices are so engrossed with classroom management and academic routines that they are unable to focus on how well their students are learning (Richardson & Placier, 2001). Unlike experts who are able to make "in flight" decisions about their teaching, novices rarely deviate from their lesson plans. Likewise, experts exhibit impromptu thinking and analyze events as they occur; novices do not have cognitive resources available for reflection until after the lesson has ended and the students are gone (Berliner, 2001).

Development of Expertise

Among the conceptualizations that postulate how an individual teacher progresses from novice to experienced to expert are stage models (Berliner, 1988; Fuller & Bown, 1975;

Huberman, 1989; Mevarech, 1995), continuum models (Feiman-Nemser, 2001; Richardson & Placier, 2001; Sternberg, 2005), and growth models (Glaser, 1992; Pratt, 1989; Tschannen-Moran et al., 1998).

Berliner's (1988) stage model of the development of pedagogical expertise defines the different levels of experience. According to the model, *novices* are student teachers and first-year teachers in Stage 1, while *advanced beginners* are second and third year teachers in Stage 2. Teachers in Stage 3 are *competent* during their third or fourth year and *proficient* after their fifth year in Stage 4. *Experts* in Stage 5 display a fluid, effortless performance. Berliner (Berliner, 1988) created the category of *postulant* for individuals who wanted to teach and had expertise in a subject area, but entered the classroom through an alternative certification route. He describes these teachers as "completely unprepared novices" (p. 7).

Huberman's (1989) "phases" of a teaching career begins with *survival and discovery* in the first three years, and then a *stabilization* phase in years four through six. The middle phase of a teaching career, years 7 – 18, can go in one of two directions: *experimentation and activism* for teachers who feel competent or *taking stock* for those with self doubts. Years 19-30 reveal either a phase of *serenity* or one of withdrawal into *conservatism*. Finally, the last phase is a process of *disengagement* from years 31-40. Huberman acknowledges that few teachers actually pass through all of these phases.

According to Fuller and Bown (1975), beginning teachers exist in a stage of *self-concern*. As experienced teachers, individuals become more confident in their teaching ability and move into a stage of curiosity about and interest in their students called *pupil concern*. After years of experience, an interest in growth and improvement leads to a concern about the *impact* of their

teaching. In a similar stage model, Mevarech (1995) suggests beginning teachers are rather helpless in their *survival* stage and then move to an *exploration* stage in which they are preoccupied with their own behavior and knowledge. The *adaptation* stage is student-centered and includes reflection and implementing new ideas.

Continuum models presume change and improvement as a teacher is more of an ebb and flow. Feiman-Nemser (2001) explains the need for teachers to learn to teach over their entire career. Professional development programs are selected according to each individual's unique needs. Unless sustained learning opportunities are available throughout an individual's career, it is unlikely that he or she will be able to teach in ways that support student learning. Sternberg (2005) views the development of teacher expertise as a cycle that individuals can pass through many times. Expertise is evident at many levels along the continuum as individuals successively gain more skills and advance to higher levels within their own practice. Richardson and Placier (2001) envision a gradual evolution as teachers move from novice to experienced to expert levels.

Pratt (1989) recognizes that an individual's level of competence changes throughout their career. Teachers who have reached a certain level of proficiency become dissatisfied with their current practice and wish to move on in their development. Glaser's (1992) model sequences instruction into ever more complex cognitive and procedural tasks in order to reach the goal of automaticity. Tschannen-Moran, Woolfolk Hoy and Hoy (1998) recommend an apprenticeship in which teachers are encouraged to work on a particular set of skills before moving on to another set. They believe this approach will instill a sense of efficacy as teachers change and grow in their classroom practice.

CHAPTER THREE: METHODOLOGY

Purpose

The purpose of this research study was to identify and describe the differences between (1) the self-efficacy beliefs of teachers from traditional college of education programs and from alternative certification programs in order to identify patterns or correlations between type of training and teachers' sense of efficacy, and (2) the self efficacy beliefs of novice, experienced and expert teachers to determine patterns or correlations between years of experience and teachers' sense of efficacy.

Research Questions

The primary research questions that ground this study were (1) Do teachers with college of education training express higher self-efficacy beliefs than teachers with alternative certification training? (2) Do experienced teachers express higher self-efficacy beliefs than novice teachers?

Participants

The participants in the research study were classroom teachers from ten high schools in Brevard County, Florida. To draw the sample for the research study, a stratified random sampling procedure was used. Each school site was considered a sub-group in order to create a random sample with a bound of +/- 5% that equitably represents the teachers within each school site. The names of the classroom teachers at each school site were alphabetized and then a

random sample was drawn using a software randomizer program (Urbaniak & Plous, 2009). The random sample (n) consisted of 298 teachers from a total population (N) of 820 teachers from ten high schools. Table 1 identifies the total number of classroom teachers from each school and the number of participants in the random sample.

Table 1

Number of Teachers in Population and Sample

School	*N*	*n*
Astronaut	72	26
Bayside	114	42
Cocoa	72	26
Eau Gallie	96	35
Heritage	52	19
Merritt Island	83	30
Palm Bay	119	43
Rockledge	67	24
Satellite	71	26
Titusville	73	27
Total	820	298

Method

Permission from both Brevard District Schools and from the UCF Institutional Review Board was secured. The notification letters and questionnaire were distributed through Brevard County School District's email system. Independent t-tests and ANOVA tests were conducted to determine the differences and relationships between the groups of teachers regarding their self-efficacy beliefs. A thematic analysis of the teachers' comments was completed. The questionnaire and the teachers' responses underwent reliability analysis and factor analysis.

Design

The initial analysis was a correlational analysis of the differences in teachers' self-reported sense of efficacy by (1) the group of teachers with traditional college of education training and the group of teachers with alternative certification training and (2) the group of novice teachers, the group of experienced teachers, and the group of expert teachers.

The secondary analysis was a correlational analysis that examines the association and co-variance between (1) type of training and sense of efficacy and (2) years of experience and sense of efficacy.

Variables

The independent variables for the research study were type of teacher training and number of years of experience.

The dependent variables were the self-efficacy beliefs expressed by the teachers.

Operational Definitions

Teachers identified their own *type of teacher training* by choosing college of education program, alternative certification program, or other. Teachers who completed coursework and student teaching prior to being hired and entering the classroom were identified as holding a traditional certification. Teachers who were hired and began teaching based on their degree in a specific content area and later gained their teaching experience while on-the-job were identified as completing an alternative certification.

The teachers' responses to the *years of experience* item on the questionnaire were categorized as follows: teachers with less than three years of teaching experience were identified

as novice teachers, teachers with four to nine years of experience were identified in this research as experienced teachers, and teachers with ten or more years of teaching experience were identified as expert teachers.

Instrument

Based on the Teachers' Sense of Efficacy Scale used in the research of Tschannen-Moran and Woolfolk Hoy (Tschannen-Moran & Woolfolk Hoy, 2001; Tschannen-Moran & Woolfolk Hoy, 2007), a questionnaire was created for this research study. The first section of the instrument required participants to respond to 24 items on a 9-point Likert scale. These 24 items are replicated from the Teachers' Sense of Efficacy Scale. The second section includes 6 items on a 5-point Likert scale with an option to add a comment. These 6 items were created specifically for this research study. The demographic items addressed type of teacher training, years of experience, gender and racial-ethnic background.

The initial items consisting of the 24-item Teachers' Sense of Efficacy Scale (Tschannen-Moran & Woolfolk Hoy, 2001) present respondents with questions about their self-perceived ability to affect the teaching and learning environment in their own classrooms. Representative items included: How much can you do to get through to the most difficult students? To what extent can you make expectations clear about student behavior? How much can you gauge student comprehension of what you have taught? The responses were indicated on a 9-point Likert scale anchored at 1 – nothing, 3 – very little, 5 – some influence, 7 – quite a bit, and 9 – a great deal. A letter of permission to use the Teachers' Sense of Efficacy Scale in research projects is found in Appendix C. Appendix D presents the instrument used in this study. Figure 1 lists the 24 items in the Teachers' Sense of Efficacy Scale.

1. How much can you do to get through to the most difficult students?
2. How much can you do to help your students think critically?
3. How much can you do to control disruptive behavior in the classroom?
4. How much can you do to motivate students who show low interest in school work?
5. To what extent can you make your expectations clear about student behavior?
6. How much can you do to get students to believe they can do well in school work?
7. How well can you respond to difficult questions from your students?
8. How well can you establish routines to keep activities running smoothly?
9. How much can you do to help your students value learning?
10. How much can you gauge student comprehension of what you have taught?
11. To what extent can you craft good questions for your students?
12. How much can you do to foster creativity?
13. How much can you do to get children to follow classroom rules?
14. How much can you do to improve the understanding of a student who is failing?
15. How much can you do to calm a student who is disruptive or noisy?
16. How well can you establish a classroom management system with each group of students?
17. How much can you do to adjust your lessons to the proper level for individual students?
18. How much can you use a variety of assessment strategies?
19. How well can you keep a few problem children from ruining an entire lesson?
20. To what extent can you provide alternative explanation or example when students are confused?
21. How well can you respond to defiant students?
22. How much can you assist families in helping their children do well in school?
23. How well can you implement alternative strategies in your classroom?
24. How well can you provide appropriate challenges for the very capable students?

Figure 1

Questionnaire Items 1-24

Additional Items

The next six items on the questionnaire were created specifically for the current research study to determine whether participants believed their efficacy was influenced by their teacher training or their own classroom experience. Using the three factors from the Sense of Efficacy Scale, these items addressed Efficacy for Student Engagement, Efficacy for Instructional Strategies, and Efficacy for Classroom Management. Representative items included: How well

did your teacher training program prepare you to effectively engage students? and How well has your personal classroom experience prepared you to effectively engage students? Participants indicated their level of self-efficacy using a 5-point Likert scale anchored at 1 – very little, 3 – somewhat, and 5 – very well. Appendix D presents the instrument used in this study. Figure 2 lists the 6 paired items.

1. How well did your teacher training program prepare you to effectively engage students?
2. How well has your personal classroom experience prepared you to effectively engage students?
3. How well did your teacher training program prepare you to effectively implement instructional strategies??
4. How well has your personal classroom experience prepared you to effectively implement instructional strategies?
5. How well did your teacher training program prepare you to effectively manage you classroom and your students?
6. How well has your personal classroom experience prepared you to effectively manage you classroom and your students?

Figure 2

Questionnaire Items 25-30

The 6 items in the second section of the instrument also offered participants an opportunity to add anonymous comments. The comments were thematically analyzed according to the "relational theme" pattern developed by Owen (1984) which focuses on the three criteria of recurrence, repetition, and forcefulness. Appendix D presents the instrument used in this study.

Demographic Information

The variables of gender and racial/ethnic background were used exclusively for descriptive statistics. Gender and racial/ethnic background were not used in data analysis in conjunction with self-efficacy beliefs. Tschannan-Moran and Woolfolk Hoy (2007) have found that these demographic variables are not "systematically related to the self-efficacy beliefs of

either novice or career teachers" (p. 952). Wheatly (2005) also found that personal background did not affect teachers' efficacy beliefs.

Factor Analysis

Tschannen-Moran and Woolfolk Hoy (2001) developed the Ohio State Teacher Efficacy Scale and conducted factor analyses of the original 36 items. The analysis identified three factors: efficacy for instructional strategies, efficacy for classroom management, and efficacy for student engagement. To create the Teachers' Sense of Efficacy Scale that is now widely used, they chose the eight items that loaded highest on each factor. The loadings ranged between 0.55-0.72 for the efficacy for instructional strategies factor, between 0.50-0.78 for the efficacy for classroom management factor, and 0.47-0.75 for the efficacy for student engagement factor.

Reliability

In addition, a subscale score was computed for each factor based on the 9-point Likert response by calculating the mean of the responses. A reliability analysis yielded an alpha coefficient of 0.91 for the efficacy of instructional strategies subscale, 0.90 for the efficacy of classroom management subscale, and 0.87 for the efficacy of student engagement subscale. The means and reliability analysis is depicted in Table 2.

Table 2

Means and Reliability for Scale and Subscales

	Mean	*SD*	*alpha*
Sense of Efficacy Scale	7.1	0.94	0.94
Instruction	7.3	1.1	0.91
Management	6.7	1.1	0.90
Engagement	7.3	1.1	0.87

Note. Tschannen-Moran, M., & Woolfolk Hoy, A. (2001). Teacher efficacy: Capturing an elusive construct. *Teaching and Teacher Education, 17*(7), p. 800.

Procedures

The administration of the questionnaire to the participants was conducted according to Dillman's (2000) Tailored Design Method. Each participant was sent a pre-notice letter by email message via the Brevard County School District's email system announcing the research study and offering an invitation for them to participate. Participants were informed that participation was voluntary and they would be allowed to decline participation at that point.

The second contact was also be made by email and included a cover letter describing the research study, the approval letter from Brevard County Schools, the letter of consent from UCF IRB, and the questionnaire. The anonymity of the survey results was emphasized. Participants were encouraged to contact the researcher if they had uncertainties about the research study or the questionnaire. The participants were asked to complete the questionnaire through a link on the SurveyMonkey website or to return a hard-copy to the researcher via the county courier system. The names of participants who decline to participate were removed from the mailing list.

Several days later a final email message was sent as a thank you to those who had responded and a subtle reminder to those who had not.

Limitations

The current research study will not offer generalizability. The results of this research study will be limited to the practical use of the teachers and administrators in the participating high schools and the district level personnel of Brevard County. The results will not necessarily be applicable to middle or elementary schools in the county. Further, the results will not be generalizable to other school districts in Florida or to other areas of the country.

CHAPTER FOUR: RESULTS

Purpose

The purpose of this research study was to identify and describe the differences between (1) the self-efficacy beliefs of teachers from traditional college of education programs and from alternative certification programs in order to identify patterns or correlations between type of training and teachers' sense of efficacy, and (2) the self efficacy beliefs of novice, experienced, and expert teachers in order to determine patterns or correlations between years of experience and teachers' sense of efficacy.

Administration of the Questionnaire

An initial contact letter was sent to all 298 participants in the random sample on April 6, 2010. Within the first two days, eleven teachers requested their names be removed from the random sample list. A second email letter was sent on April 8, 2010, to describe the research study and invite teachers to participate. The approval letters from Brevard County Schools and from UCF Institutional Review board were attached. A link to the questionnaire which was created on the SurveyMonkey site was provided in the body of the email and a soft-copy of the questionnaire was attached. Within two days, three more teachers requested to be removed from the list of participants. The active pool of participants totaled 284. There were 67 responses to the survey in the first week.

A third and final email letter was sent to the active participants on April 14, 2010. The email was both a thank you to those who had already responded and a reminder to the others to

respond in a timely manner. Within three days, the total number of respondents was 127. The link on the SurveyMonkey site was closed on April 23, 2010 after six days of inactivity.

The original random sample of 298 participants, less the fourteen who withdrew, leaves 284 possible participants. Although 127 teachers responded, the responses from two teachers were removed because they did not identify their years of teaching experience or their type of teacher training, consequently making their responses unusable. Thus, the number of participants involved in the research study was 125. A response rate of 44% resulted from 125 responses from an active pool of 284 participants.

Descriptive Statistics

The number of teachers with college of education training (n = 86) was more than double the number of teachers with alternative certification (n = 39). The number of expert teachers with more than 10 years of teaching experience (n = 79) was much greater than the combined number of novice (n = 11) and experienced (n = 35) teacher. Table 3 illustrates that college of education teachers and expert teachers make up more than 60% of each group of teachers.

Table 3

Percentages by Training and Years of Experience

	% of Participants
Teacher Training	
College of Education	69
Alternative Certification	31
Years of Experience	
1 – 3 years	9
4 – 9 years	28
10 + years	63

Table 4 shows the number of teachers with college of education training and alternative certification training and the number of teachers with novice, experienced, or expert years of experience. The number of teachers in each group is also identified according to type of training combined with years of experience.

Table 4

Number of Teachers in Each Group

	Description
Totals	
86	College of Education trained teachers
39	Alternative Certification trained teachers
11	Novice teachers
35	Experienced teachers
79	Expert teachers
Groups	
4	Novice teachers with College of Education training
22	Experienced teachers with College of Education training
60	Expert teachers with College of Education training
7	Novice teachers with Alternative Certification training
13	Experienced teachers with Alternative Certification training
19	Expert teachers with Alternative Certification training

The number of female teachers (n = 89) was more than double the number of male teachers (n = 36). The number of teachers by gender for the sample group seemed out-of-balance, so the researcher made a comparison to the number of teachers by gender for the population of high school teachers in Brevard County. As depicted in Table 5, the percentage female teachers in the sample (71%) is slightly over-represented when compared to the percentage of females in the population of Brevard County teachers (63%). Conversely, the

percentage of male teachers in the sample (29%) is slightly under-represented when compared to the percentage of males in the population of Brevard county teachers (37%).

The number of White teachers (n = 112) was considerably greater than the combined number of other teachers: Black (n = 3), Hispanic (n = 5), American Indian and Pacific Islander (n = 1), multiracial (n = 1), and unidentified (n = 3). The number of teachers by racial-ethnic background for the sample group was considerably out-of-balance, so the researcher made a comparison to the number of teachers by racial-ethnic background for the population of high school teachers in Brevard County. The percentage of teachers within each racial-ethnic category is fairly equivalent between the sample and the population, as can be seen in Table 5.

Table 5

Percentages by Gender and Racial-Ethnic Background

	% in Population	*% in Sample*
Gender		
Male	37	29
Female	63	71
Racial-Ethnic		
White	89	90
Black	4	2
Hispanic	6	4
Indian, Islander, Multiracial	1	2
Not identified	-	2

Analysis of Questionnaire

Once the responses from each of the 125 participants were input into SPSS software program, an in-depth analysis of the data was conducted. The factor analysis and reliability

analysis were the first tests to be completed in order to determine whether the results from the current research study were similar to the results from previous research studies performed by Tschannen-Moran and Woolfolk Hoy (2001).

The next step was an analysis of the data for each group: (1) the teachers with college of education training and the teachers with alternative certification training, (2) the novice teachers with three or less years of teaching experience, the experienced teachers with four to nine years of teaching experience, and the expert teachers with ten or more years of teaching experience, (3) the male and female teachers, and (4) the White teachers, Black teachers, Hispanic teachers, American Indian/Pacific Islander teachers, and the multi-racial teachers. Independent *t* tests were conducted for the teacher training groups and the gender groups. Ordinarily there is concern when performing multiple *t* tests because of the possibility of Type I error; however, in this case there are only two groups being compared to one another on multiple dependent variables, so the use of *t* tests is acceptable. Analysis of variance (ANOVA) tests were conducted for the years of experience groups and the racial-ethnic groups because there were three or more groups being compared with one another with respect to the dependent variables.

After the initial analysis of the 24 items on the Teachers' Sense of Efficacy Scale and the 6 items created for this research study based were completed, factorial ANOVA tests were performed to look for any possible interaction effects between the type of teacher training and the number of years of experience. Finally, based on the three known factors exhibited in previous research studies, a total scores analysis was performed for the 24 items on the Teachers' Sense of Efficacy Scale and the 6 items created for this research study.

Factor Analysis

The participants' responses to the items on the Teachers' Sense of Efficacy Scale were subjected to a factor analysis. The maximum likelihood estimation procedure was used to extract four factors from the variable data collected from the questionnaire. Kaiser's rule for eigenvalues was used to determine which factors were most eligible for interpretation. Together the four factors (9.104, 2.375, 1.785, and 1.294) explained nearly 61% of the variance with a cumulative percentage of 60.659. The eigenvalues and cumulative percentages are shown in Table 6. For a visual representation, the scree plot of the eigenvalues is shown in Figure 3.

Table 6

Eigenvalues and Cumulative Percentages: Items 1-24

	Initial Eigenvalues		
Factor	*Total*	*% of Variance*	*Cumulative %*
1	9.104	37.931	37.931
2	2.375	9.896	47.827
3	1.785	7.438	55.265
4	1.294	5.393	60.659
5	.911	3.798	64.456
6	.878	3.657	68.113
7	.833	3.471	71.584
8	.761	3.169	74.753
9	.698	2.907	77.660
10	.621	2.588	80.248
11	.561	2.338	82.586
12	.536	2.233	84.819
13	.499	2.078	86.897
14	.467	1.944	88.841
15	.411	1.713	90.554
16	.352	1.466	92.020
17	.336	1.402	93.422
18	.311	1.297	94.719
19	.281	1.170	95.889
20	.258	1.077	96.966
21	.225	.938	97.903
22	.205	.855	98.758
23	.157	.655	99.413
24	.141	.587	100.000

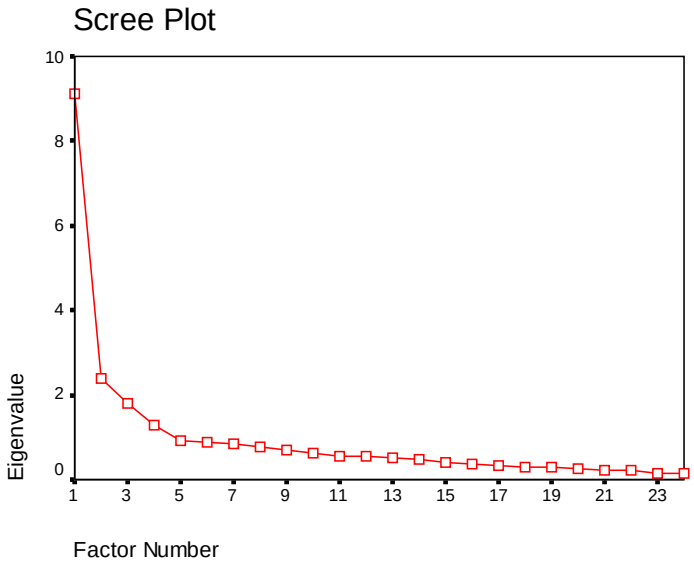

Figure 3

Scree Plot of Eigenvalues: Items 1-24

Several conditions necessary for the use of the maximum likelihood procedures were met. The factor loadings converged in 5 iterations. There was no warning that the results were nonpositive definite. The table of communalities was acceptable since none of the extractions neared or exceeded 1.00. The correlations all exceed .25, so there is sufficient justification to retain the Promax rotation method of analysis.

The interpretation of the structure matrix suggests four factors. Factor 1 includes follow rules, defiant students, establish management, ruin lesson, calm noisy students, disruptive behavior, expectations of behavior, and establish routines. These eight items correspond exactly with the factor system determined by Tschannen-Moran and Woolfolk Hoy (2001) which is labeled “Efficacy for Classroom Management.” Factor 2 includes motivate low interest, get through to difficult students, do well in school, improve understanding, foster creativity, value

learning, think critically, variety of assessments, and gauge comprehension. Seven of these nine items correspond with Tschannen-Moran and Woolfolk Hoy's factor labeled "Efficacy for Student Engagement." Factor 3 included craft questions, appropriate challenges, alternative explanations, and respond to questions. These four items were all part of Tschannen-Moran and Woolfolk Hoy's factor labeled "Efficacy for Instructional Strategies." Factor 4 includes implementation of strategies, assist families, and adjust level of lesson.

There are two variations in the results from this research study and the established factors from the work of Tschannen-Moran and Woolfolk Hoy. First, four factors emerged from this study instead of the anticipated three factors. Second, only three items from the current research study did not correspond to the established factor system: variety of assessments and gauge comprehension loaded in Student Engagement rather than Instructional Strategies. Assist families loaded with the Instructional Strategies items rather than in Student Engagement. Overall, the factors did not group the items as was expected based on previous research with the Teachers' Sense of Efficacy Scale. Table 7 presents the structure matrix.

Table 7

Structure Matrix: Items 1-24

	Factor			
	1	*2*	*3*	*4*
Follow rules	.868	.346	.366	.271
Defiant students	.796	.361	.342	.606
Establish management	.777	.413	.417	.415
Ruin a lesson	.775	.349	.234	.553
Calm noisy students	.724	.522	.308	.322
Disruptive behavior	.715	.436	.271	.256
Expectation of behavior	.585	.367	.494	.129
Establish routine	.551	.245	.536	.263
Motivate low interest	.397	.758	.254	.479
Difficult student	.426	.732	.238	.525
Do well	.356	.731	.421	.224
Improve understanding	.300	.695	.257	.434
Foster creativity	.240	.677	.582	.399
Value learning	.379	.664	.440	.430
Think critically	.289	.546	.482	.266
Variety of assessments	.191	.531	.513	.528
Gauge comprehension	.343	.484	.453	.217
Craft questions	.283	.348	.711	.321
Appropriate challenges	.243	.504	.698	.387
Alternative explanations	.339	.290	.553	.420
Respond to questions	.318	.185	.502	.178
Implement strategies	.398	.558	.554	.814
Assist families	.340	.461	.275	.610
Adjust level	.333	.433	.516	.587

Table 8 illustrates the loadings for the current and previous research studies. Items 10, 18, and 23 represent the questionnaire items that did not load into the anticipated factor descriptors based on the previous work by Tschannen-Moran and Woolfolk Hoy.

Table 8

Comparison of Factor Loadings

Questionnaire Item	*Factor Loading: Random Sample*	*Factor Loading: Previous Studies*
1 difficult students	Factor 2: Engage Students	Engage Students
2 think critically	Factor 2: Engage Students	Engage Students
3 disruptive behavior	Factor 1: Classroom Management	Classroom Management
4 motivate low interest	Factor 2: Engage Students	Engage Students
5 expectations of behavior	Factor 1: Classroom Management	Classroom Management
6 do well in school	Factor 2: Engage Students	Engage Students
7 respond to questions	Factor 3: Instructional Strategies	Instructional Strategies
8 establish routines	Factor 1: Classroom Management	Classroom Management
9 value learning	Factor 2: Engage Students	Engage Students
10 gauge comprehension	**Factor 2: Engage Students**	**Instructional Strategies**
11 craft questions	Factor 3: Instructional Strategies	Instructional Strategies
12 foster creativity	Factor 2: Engage Students	Engage Students
13 follow rules	Factor 1: Classroom Management	Classroom Management
14 improve understanding	Factor 2: Engage Students	Engage Students
15 calm noisy students	Factor 1: Classroom Management	Classroom Management
16 establish management	Factor 1: Classroom Management	Classroom Management
17 adjust level	Factor 4: Instructional Strategies	Instructional Strategies
18 variety of assessments	**Factor 2: Engage Students**	**Instructional Strategies**
19 ruin lesson	Factor 1: Classroom Management	Classroom Management
20 alternative explanations	Factor 3: Instructional Strategies	Instructional Strategies
21 defiant students	Factor 1: Classroom Management	Classroom Management
22 assist families	**Factor 4: Instructional Strategies**	**Engage Students**
23 implement strategies	Factor 4: Instructional Strategies	Instructional Strategies
24 appropriate challenges	Factor 3: Instructional Strategies	Instructional Strategies

In order to further investigate the unanticipated fourth factor that resulted from the current study, second factor analysis was conducted using only the 12 questionnaire items that Tschannen-Moran and Woolfolk Hoy (2001) use as a short form of the Teachers' Sense of Efficacy Scale. The maximum likelihood estimation procedure with Kaiser's rule for eigenvalues

was used to extract three factors. Together the three factors (5.039, 1.555, and 1.117) explained more than 64% of the variance with a cumulative percentage of 64.256. The eigenvalues and cumulative percentages are shown in Table 9. For a visual representation, the scree plot of the eigenvalues is shown in Figure 4.

Table 9

Eigenvalues and Cumulative Percentages: Short Form

	Initial Eigenvalues		
Factor	*Total*	*% of Variance*	*Cumulative %*
1	5.039	41.989	41.989
2	1.555	12.959	54.948
3	1.117	9.308	64.256
4	.778	6.482	70.738
5	.703	5.858	76.596
6	.667	5.560	82.156
7	.517	4.307	86.436
8	.427	3.559	90.022
9	.362	3.020	93.042
10	.331	2.755	95.796
11	.263	2.194	97.991
12	.241	2.009	100.00

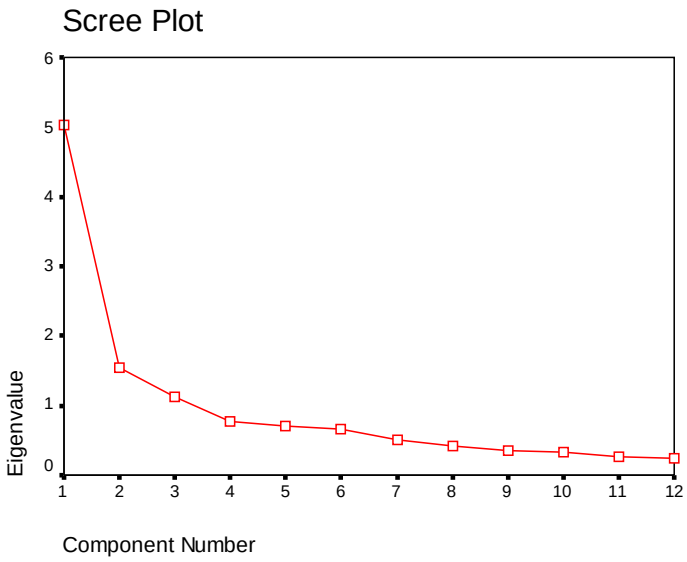

Figure 4

Scree Plot of Eigenvalues: Short Form

The conditions necessary for the use of the maximum likelihood procedures were met. The factors loadings converged in 8 iterations. There was no warning that the results were nonpositive definite. The table of communalities was acceptable since none of the extractions neared or exceeded 1.00. The correlations all exceed .25, so there is sufficient justification to retain the Promax rotation method of analysis.

The interpretation of the structure matrix suggests three factors which correspond well with the factor system determined by Tschannen-Moran and Woolfolk Hoy (2001). Factor 1, labeled "Efficacy for Classroom Management," included follow rules, establish management, calm noisy students, and disruptive behavior. Factor 2, labeled "Efficacy for Instructional Strategies," included implementation of strategies, variety of assessments, assist families, alternative explanations, and craft questions. Factor 3, labeled "Efficacy for Student

Engagement," included do well in school, value learning, and motivate low interest. The only item that did not load as anticipated was "assist families." All together, the factors grouped the items in a theoretically understandable way. Table 10 presents the structure matrix.

Table 10

Structure Matrix: Short Form

	Factor		
	1	*2*	*3*
Follow rules	.864	.365	.378
Establish management	.781	.508	.423
Calm noisy students	.749	.407	.487
Disruptive behavior	.736	.371	.432
Implement strategies	.435	.913	.461
Variety of assessments	.251	.673	.421
Assist families	.354	.564	.471
Alternative explanations	.343	.505	.330
Craft questions	.326	.483	.315
Do well	.422	.439	.852
Value learning	.414	.557	.707
Motivate low interest	.470	.562	.635

The participants' responses to the six items based on teacher training program and personal classroom experience were subjected to a factor analysis. The maximum likelihood estimation procedure was used to extract two factors. Kaiser's rule for eigenvalues was used to determine which factors were most eligible for interpretation. Together the two factors (2.422 and 2.138) explained nearly 76% of the variance with a cumulative percentage of 75.999. The eigenvalues and cumulative percentages are shown in Table 11. For a visual representation, the scree plot of the eigenvalues is shown in Figure 5.

Table 11

Eigenvalues and Cumulative Percentages: Items 25-30

	Initial Eigenvalues		
Factor	*Total*	*% of Variance*	*Cumulative %*
1	2.422	40.366	40.366
2	2.138	35.633	75.999
3	.586	9.763	85.762
4	.356	5.942	91.704
5	.260	4.326	96.030
6	.238	3.970	100.00

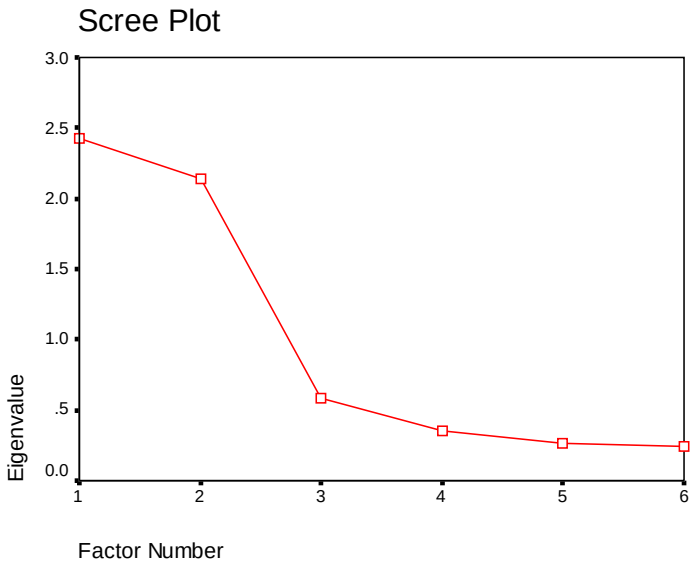

Figure 5

Scree Plot of Eigenvalues: Items 25-30

The conditions necessary for the use of the maximum likelihood procedures were met. The factors loadings converged in 4 iterations. There was no warning that the results were nonpositive definite. The table of communalities was acceptable since none of the extractions

neared or exceeded 1.00. The correlations all exceed .25, so there is sufficient justification to retain the Promax rotation method of analysis.

The interpretation of the structure matrix indicates two factors. Factor 1 consisted of the three questionnaire items addressing how well the teacher training program prepared the teachers. Factor 2 consisted of the three questionnaire items addressing how well personal classroom experience prepared the teachers. The factors grouped the items together in a theoretically understandable way. Table 12 presents the structure matrix.

Table 12

Structure Matrix: Items 25-30

	Factor	
	1	*2*
Training Program and Engagement	.870	
Training Program and Instructional Strategies	.826	.169
Training Program and Management	.768	
Classroom Experience and Engagement		.876
Classroom Experience and Instructional Strategies		.773
Classroom experience and Management		.679

Reliability

The participants' responses to the items on the Teachers' Sense of Efficacy Scale were tested for reliability. Overall, the responses obtained from all 24 items were judged to be highly reliable for the 125 high school teachers in Brevard County, with a total alpha coefficient of .9271. The output from the SPSS reliability analysis indicated that the total alpha coefficient would decrease if any one item was to be removed from the analysis. Table 13 illustrates the

corrected item-total correlations.

Table 13

Reliability Correlations: Items 1-24

Questionnaire Item	*Corrected Item-Total Correlation*	*Alpha if Item Deleted*
1 difficult students	.6245	.9231
2 think critically	.5196	.9249
3 disruptive behavior	.5524	.9244
4 motivate low interest	.6199	.9232
5 expectations of behavior	.5122	.9252
6 do well in school	.5845	.9238
7 respond to questions	.3638	.9269
8 establish routines	.5008	.9252
9 value learning	.6371	.9229
10 gauge comprehension	.4951	.9253
11 craft questions	.5038	.9251
12 foster creativity	.5950	.9236
13 follow rules	.5966	.9237
14 improve understanding	.5589	.9243
15 calm noisy students	.6221	.9232
16 establish management	.6582	.9229
17 adjust level	.5788	.9240
18 variety of assessments	.5353	.9248
19 ruin lesson	.6042	.9235
20 alternative explanations	.4896	.9254
21 defiant students	.6602	.9225
22 assist families	.5280	.9253
23 implement strategies	.7068	.9216
24 appropriate challenges	.5667	.9241
Total		.9271

The reliability analysis for items 25 -30 proved to be more problematic. While the total alpha coefficient of .6973 can be considered adequate, a noteworthy pattern in the analysis

warranted further investigation. The responses for the items asking teachers about their teacher training program revealed higher corrected item-total correlations (.5991, .7124, and .5778, respectively) than the items asking teachers about their personal classroom experience (.1798, .2405, and .2780, respectively). The responses for the items asking teachers about their teacher training program predicted lower total alpha coefficient if removed (.5920, .5443, and .6034, respectively) than the items asking teachers about their personal classroom experience (.7150, .7045, and .6986, respectively). If the three items addressing teacher training programs had been removed, the total alpha would decrease quite a bit. However, if the three items addressing personal classroom experience were to be eliminated, the total alpha would reveal only a slight increase. Table 14 illustrates the corrected item-total correlations.

Table 14

Reliability Correlations: Items 25-30

	Questionnaire Item	*Corrected Item-Total Correlation*	*Alpha if Item Deleted*
	Training		
25	student engagement	.5991	.5920
27	instructional strategies	.7124	.5443
29	classroom management	.5778	.6034
	Experience		
26	student engagement	.1798	.7150
28	instructional strategies	.2405	.7045
30	classroom management	.2780	.6986
	Total		.6973

Table 15 shows a comparison of the alpha coefficients revealed in the analysis for this research study and the alpha coefficients established by Tschannen-Moran and Woolfolk Hoy (2001).

Table 15

Comparison of Alpha Coefficients

	α for Random Sample	*α for Previous Studies*
Sense of Efficacy Scale	0.9271	0.94
Engagement	0.8625	0.87
Instruction	0.8291	0.91
Management	0.8985	0.90

A reliability analysis was conducted for the means of all 24 items on the Teachers' Sense of Efficacy Scale and the means for each of the three factors associated with the Scale to determine whether or not the responses of the random sample of high school teachers in Brevard county, Florida, resemble the means of the responses of participants in prior research studies performed by Tschannen-Moran and Woolfolk Hoy (2001). Based on the reliability analysis, the total mean for the 24 items on the Teachers' Sense of Efficacy Scale on a 9-point Likert scale was 7.0842 with a variance of .4857. The alpha coefficient was .9271. The responses to the eight items that form the factor of "effective student engagement" reveal a subscale mean of 6.2795 with a variance of .2087. The alpha coefficient was .8625. The responses to the eight items that form the factor of "effective instructional strategies" reveal a subscale mean of 7.4116 with a variance of .0851. The alpha coefficient was .8291. The responses to the eight items that form the factor of "effective classroom management" reveal a subscale mean of 7.5614 with a

variance of .1792. The alpha coefficient was .8985. Each of the subscales indicates a strong reliability. Table 16 depicts the means.

The six items on the questionnaire created specifically for the current research study asked teachers to determine how well prepared they felt to engage students, to use instructional strategies, and to create a classroom management system based on either their teacher training program or their personal classroom experience. The total mean for all six items on a 5-point Likert scale was 3.8805 with a variance of .7874. The alpha coefficient was .7110, pointing to an adequate reliability. The responses to the three items asking about teacher training program reveal a subscale mean of 3.0784 with a variance of .0361. The alpha coefficient was .8647, a strong reliability. The responses to the three items asking about personal classroom experience reveal a subscale mean of 4.6827 with a variance of .0022. The alpha coefficient was .8130, a strong reliability. Table 16 depicts the means.

Table 16

Reliability Means

	M	*variance*	*α*
Items 1-24	7.0842	.4857	.9271
Engage students	6.2795	.2087	.8625
Instructional strategies	7.4116	.0851	.8291
Classroom management	7.5614	.1792	.8985
Items 25-30	3.8805	.7874	.7110
Teacher training program	3.0784	.0361	.8647
Personal classroom experience	4.6827	.0022	.8130

Items 1 - 24

The questionnaire that was administered to each of the participants is based on the Teachers' Sense of Efficacy Scale (Tschannen-Moran & Woolfolk Hoy, 2001). There are 24 items which require a response on a 9-point Likert scale which is anchored at anchored at 1 – nothing, 3 – very little, 5 – some influence, 7 – quite a bit, and 9 – a great deal.

Type of Teacher Training

Independent sample *t* tests were conducted to determine if teachers with college of education training reported higher levels of self-efficacy beliefs than teachers with alternative certification training. Using SPSS software, each of the twenty-four items based on the Teachers' Sense of Efficacy Scale and each the six items based on training compare to classroom experience were tested. All t tests were conducted using an alpha of .05. The null hypothesis for each item on the questionnaire was that there would be no difference in the means between teacher groups, thus, the sample means would be equal. The null hypothesis can be represented as: $H = \mu_{college} = \mu_{alternative}$.

The assumption of normality was tested. A review of the Shipiro-Wilk's test of normality indicated that all items were statistically significant at the .05 level. The skewness and kurtosis statistics were within the +/- 1 range for both the teachers with college of education and the teachers with alternative certification training for the majority of items. Four items revealed a skewness or kurtosis statistic within the +/- 2 range: disruptive behavior, expectations for behavior, establishing routines, and alternative explanations. Only one item, using a variety of assessments, revealed skewness and kurtosis statistics that might indicate normality was not a reasonable assumption. However, independent *t* tests are generally robust to violations of

normality if the sample size is large. The Central Limit Theorem states that the distribution of means will be distributed normally if the sample size is over 30 (Shavelson, 1981).

The means for the 24 items from the Teachers' Sense of Efficacy Scale are based on a 9-point Likert scale. The higher the value, the more efficacious the teacher feels about that item. Table 17 depicts the results of the t tests and the means for each item.

Table 17

Statistics for Teacher Training: Items 1-24

				College of Education		*Alternative Certification*	
Questionnaire Item	*t*	*df*	*p*	*M*	*SD*	*M*	*SD*
1 difficult students	.131	123	.896	6.09	1.699	6.05	1.521
2 think critically	-.188	123	.857	6.74	1.497	6.79	1.151
3 disruptive behavior	-.204	123	.839	7.51	1.225	7.56	1.553
4 motivate low interest	.181	123	.857	5.69	1.618	5.63	1.512
5 expectations of behavior	1.305	123	.194	8.26	.923	8.00	1.170
6 do well in school	-1.157	123	.250	6.74	1.339	7.05	1.486
7 respond to questions	.234	123	.815	7.76	1.070	7.72	.887
8 establish routines	-.407	123	.685	8.01	1.111	8.10	1.252
9 value learning	-.699	123	.486	6.31	1.495	6.51	1.620
10 gauge comprehension	-.629	123	.530	7.38	1.198	7.51	.914
11 craft questions	.953	123	.342	7.62	1.176	7.41	1.093
12 foster creativity	-.756	123	.451	6.47	1.452	6.69	1.641
13 follow rules	-.741	123	.460	7.53	1.234	7.72	1.376
14 improve understanding	-1.828	123	.070	6.21	1.379	6.67	1.132
15 calm noisy students	-.954	123	.342	6.93	1.454	7.21	1.576
16 establish management	-.559	123	.578	7.74	1.200	7.87	1.174
17 adjust level	.311	123	.756	6.94	1.498	6.85	1.679
18 variety of assessments	-.838	123	.403	7.25	1.637	7.51	1.571
19 ruin lesson	.173	123	.863	7.16	1.454	7.10	1.984
20 alternative explanations	-.700	123	.485	7.73	1.010	7.86	1.056
21 defiant students	-.104	123	.917	7.20	1.454	7.23	1.693
22 assist families	-.884	123	.378	5.53	1.754	5.84	1.785
23 implement strategies	.291	123	.771	7.16	1.571	7.08	1.511
24 appropriate challenges	-.773	123	.441	7.35	1.477	7.56	1.252

The test for item 1 “How much can you do to get through to the most difficult students?” was not statistically significant, t (123) = .131, p = .896. Levene’s test for equality of variances was met (F = .255, p = .615). Teachers with college of education training (n = 86, M = 6.09, SD = 1.699) expressed higher self-efficacy beliefs than teachers with alternative certification training (n = 39, M = 6.05, SD = 1.521). The effect size was calculated by η^2 and found to be .012, which indicates a small effect size that accounts for approximately 1% of the variance in self-efficacy beliefs can be attributed to type of training.

The test for item 2 “How much can you do to help your students think critically?” was not statistically significant, t (123) = -.188, p = .851. Levene’s test for equality of variances was met (F = 3.106, p = .080). Teachers with alternative certification training (n = 39, M = 6.79, SD = 1.151) expressed higher self-efficacy beliefs than teachers with college of education training (n = 86, M = 6.74, SD = 1.497). The effect size was calculated by η^2 and found to be -.019, which indicates a small effect size that accounts for approximately 2% of the variance in self-efficacy beliefs can be attributed to type of training.

The test for item 3 “How much can you do to control disruptive behavior in the classroom?” was not statistically significant, t (123) = -.204, p = .839. Levene’s test for equality of variances was met (F = 1.690, p = .196). Teachers with alternative certification training (n = 39, M = 7.56, SD = 1.553) expressed higher self-efficacy beliefs than teachers with college of education training (n = 86, M = 7.51, SD = 1.225). The effect size was calculated by η^2 and found to be -.018, which indicates a small effect size that accounts for approximately 2% of the variance in self-efficacy beliefs can be attributed to type of training.

The test for item 4 “How much can you do to motivate students who show low interest in

school work?" was not statistically significant, t (123) = .181, p = .857. Levene's test for equality of variances was met (F = .355, p = .553). Teachers with college of education training (n = 86, M = 5.69, SD = 1.618) expressed higher self-efficacy beliefs than teachers with alternative certification training (n = 39, M = 5.63, SD = 1.512). The effect size was calculated by η^2 and found to be .019, which indicates a small effect size that accounts for approximately 2% of the variance in self-efficacy beliefs can be attributed to type of training.

The test for item 5 "To what extent can you make your expectations clear about student behavior?" was not statistically significant, t (123) = 1.305, p = .194. Levene's test for equality of variances was met (F = 2.163, p = .144). Teachers with college of education training (n = 86, M = 8.26, SD = .923) expressed higher self-efficacy beliefs than teachers with alternative certification training (n = 39, M = 8.00, SD = 1.170). The effect size was calculated by η^2 and found to be .122, which indicates a fairly large effect size that accounts for approximately 12% of the variance in self-efficacy beliefs can be attributed to type of training.

The test for item 6 "How much can you do to get students to believe they can do well in school work?" was not statistically significant, t (123) = -1.157, p = .25. Levene's test for equality of variances was met (F = .285, p = .594). Teachers with alternative certification training (n = 39, M = 7.05, SD = 1.486) expressed higher self-efficacy beliefs than teachers with college of education training (n = 86, M = 6.74, SD = 1.339). The effect size was calculated by η^2 and found to be -.109, which indicates a fairly large effect size that accounts for approximately 11% of the variance in self-efficacy beliefs can be attributed to type of training.

The test for item 7 "How well can you respond to difficult questions from your students?" was not statistically significant, t (123) = .234, p = .815. Levene's test for equality of

variances was met (F = 1.4575, p = .230). Teachers with college of education training (n = 86, M = 7.76, SD = 1.070) expressed higher self-efficacy beliefs than teachers with alternative certification training (n = 39, M = 7.72, SD = .887). The effect size was calculated by η^2 and found to be .020, which indicates a small effect size that accounts for approximately 2% of the variance in self-efficacy beliefs can be attributed to type of training.

The test for item 8 "How well can you establish routines to keep activities running smoothly?" was not statistically significant, t (123) = -.407, p = .685. Levene's test for equality of variances was met (F = 1.675, p = .198). Teachers with alternative certification training (n = 39, M = 8.10, SD = 1.252) expressed higher self-efficacy beliefs than teachers with college of education training (n = 86, M = 8.01, SD = 1.111). The effect size was calculated by η^2 and found to be -.038, which indicates a moderate effect size that accounts for approximately 4% of the variance in self-efficacy beliefs can be attributed to type of training.

The test for item 9 "How much can you do to help your students value learning?" was not statistically significant, t (123) = -.699, p = .486. Levene's test for equality of variances was met (F = .550, p = .460). Teachers with alternative certification training (n = 39, M = 6.51, SD = 1.620) expressed higher self-efficacy beliefs than teachers with college of education training (n = 86, M = 6.31, SD = 1.495). The effect size was calculated by η^2 and found to be -.064, which indicates a moderate effect size that accounts for approximately 6% of the variance in self-efficacy beliefs can be attributed to type of training.

The test for item 10 "How much can you gauge student comprehension of what you have taught?" was not statistically significant, t (123) = -.629, p = .530. Levene's test for equality of variances was met (F = 2.279, p = .134). Teachers with alternative certification training (n = 39,

M = 7.51, *SD* = .914) expressed higher self-efficacy beliefs than teachers with college of education training (*n* = 86, *M* = 7.38, *SD* = 1.198). The effect size was calculated by η^2 and found to be -.061, which indicates a moderate effect size that accounts for approximately 6% of the variance in self-efficacy beliefs can be attributed to type of training.

The test for item 11 "To what extent can you craft good questions for your students?" was not statistically significant, *t* (123) = .953, *p* = .342. Levene's test for equality of variances was met (*F* = .889, *p* = .347). Teachers with college of education training (*n* = 86, *M* = 7.62, *SD* = 1.176) expressed higher self-efficacy beliefs than teachers with alternative certification training (*n* = 39, *M* = 7.41, *SD* = 1.093). The effect size was calculated by η^2 and found to be .092, which indicates a fairly large effect size that accounts for approximately 9% of the variance in self-efficacy beliefs can be attributed to type of training.

The test for item 12 "How much can you do to foster creativity?" was not statistically significant, *t* (123) = -.756, *p* = .451. Levene's test for equality of variances was met (*F* = .447, *p* = .505). Teachers with alternative certification training (*n* = 39, *M* = 6.69, *SD* = 1.641) expressed higher self-efficacy beliefs than teachers with college of education training (*n* = 86, *M* = 6.47, *SD* = 1.452). The effect size was calculated by η^2 and found to be -.071, which indicates a moderate effect size that accounts for approximately 7% of the variance in self-efficacy beliefs can be attributed to type of training.

The test for item 13 "How much can you do to get children to follow the classroom rules?" was not statistically significant, *t* (123) = -.741, *p* = .460. Levene's test for equality of variances was met (*F* = .568, *p* = .453). Teachers with alternative certification training (*n* = 39, *M* = 7.72, *SD* = 1.376) expressed higher self-efficacy beliefs than teachers with college of

education training (n = 86, M = 7.53, SD = 1.234). The effect size was calculated by η^2 and found to be -.072, which indicates a moderate effect size that accounts for approximately 7% of the variance in self-efficacy beliefs can be attributed to type of training.

The test for item 14 "How much can you do to improve the understanding of a student who is failing?" was not statistically significant, t (123) = -1.8281, p = .070. Levene's test for equality of variances was met (F = 2.848, p = .094). Teachers with alternative certification training (n = 39, M = 6.67, SD = 1.132) expressed higher self-efficacy beliefs than teachers with college of education training (n = 86, M = 6.21, SD = 1.379). The effect size was calculated by η^2 and found to be -.179, which indicates a very large effect size that accounts for approximately 18% of the variance in self-efficacy beliefs can be attributed to type of training.

The test for item 15 "How much can you do to calm a student who is disruptive or noisy?" was not statistically significant, t (123) = -.954, p = .342. Levene's test for equality of variances was met (F = 1.050, p = .308). Teachers with alternative certification training (n = 39, M = 7.21, SD = 1.576) expressed higher self-efficacy beliefs than teachers with college of education training (n = 86, M = 6.93, SD = 1.454). The effect size was calculated by η^2 and found to be -.092, which indicates a fairly large effect size that accounts for approximately 9% of the variance in self-efficacy beliefs can be attributed to type of training.

The test for item 16 "How well can you establish a classroom management system with each group of students?" was not statistically significant, t (123) = -.555, p = .580. Levene's test for equality of variances was met (F = .004, p = .953). Teachers with alternative certification training (n = 39, M = 7.87, SD = 1.174) expressed higher self-efficacy beliefs than teachers with college of education training (n = 86, M = 7.74, SD = 1.200). The effect size was calculated by η^2

and found to be -.055, which indicates a moderate effect size that accounts for approximately 6% of the variance in self-efficacy beliefs can be attributed to type of training.

The test for item 17 "How much can you do to adjust your lesson to the proper level for individual students?" was not statistically significant, t (123) = .311, p = .756. Levene's test for equality of variances was met (F = 1.220, p = .271). Teachers with college of education training (n = 86, M = 6.94, SD = 1.498) expressed higher self-efficacy beliefs than teachers with alternative certification training (n = 39, M = 6.85, SD = 1.679). The effect size was calculated by η^2 and found to be .028, which indicates a small effect size that accounts for approximately 3% of the variance in self-efficacy beliefs can be attributed to type of training.

The test for item 18 "How much can use a variety of assessment strategies?" was not statistically significant, t (123) = -.838, p = .403. Levene's test for equality of variances was met (F = .087, p = .769). Teachers with alternative certification training (n = 39, M = 7.51, SD = 1.571) expressed higher self-efficacy beliefs than teachers with college of education training (n = 86, M = 7.25, SD = 1.637). The effect size was calculated by η^2 and found to be -.081, which indicates a moderate effect size that accounts for approximately 8% of the variance in self-efficacy beliefs can be attributed to type of training.

The test for item 19 "How well can you keep a few problem children from ruining an entire lesson?" was not statistically significant, t (123) = .173, p = .863. Levene's test for equality of variances cannot be assumed (F = 6.854, p = .010). Teachers with college of education training (n = 86, M = 7.16, SD = 1.454) expressed higher self-efficacy beliefs than teachers with alternative certification training (n = 39, M = 7.10, SD = 1.984). The effect size was calculated by η^2 and found to be .017, which indicates small effect size that accounts for

approximately 2% of the variance in self-efficacy beliefs can be attributed to type of training.

The test for item 20 “To what extent can you provide an alternative explanations or example when students are confused?” was not statistically significant, t (123) = -.700, p = .485. Levene’s test for equality of variances was met (F = .908, p = .343). Teachers with alternative certification training (n = 39, M = 7.86, SD = 1.056) expressed higher self-efficacy beliefs than teachers with college of education training (n = 86, M = 7.73, SD = 1.010). The effect size was calculated by η^2 and found to be -.063, which indicates a moderate effect size that accounts for approximately 6% of the variance in self-efficacy beliefs can be attributed to type of training.

The test for item 21 “How well can you respond to defiant students?” was not statistically significant, t (123) = -.104, p = .917. Levene’s test for equality of variances was met (F = 2.758, p = .099). Teachers with alternative certification training (n = 39, M = 7.23, SD = 1.693) expressed higher self-efficacy beliefs than teachers with college of education training (n = 86, M = 7.20, SD = 1.454). The effect size was calculated by η^2 and found to be -.010, which indicates a small effect size that accounts for approximately 1% of the variance in self-efficacy beliefs can be attributed to type of training.

The test for item 22 “How much can you assist families in helping their children do well in school?” was not statistically significant, t (123) = -.884, p = .378. Levene’s test for equality of variances was met (F = .119, p = .731). Teachers with alternative certification training (n = 39, M = 5.84, SD = 1.785) expressed higher self-efficacy beliefs than teachers with college of education training (n = 86, M = 5.53, SD = 1.754). The effect size was calculated by η^2 and found to be -.087, which indicates a fairly large effect size that accounts for approximately 9% of the variance in self-efficacy beliefs can be attributed to type of training.

The test for item 23 “How well can you implement alternative strategies in your classroom?” was not statistically significant, t (123) = .291, p = .771. Levene’s test for equality of variances was met (F = .250, p = .618). Teachers with college of education training (n = 86, M = 7.16, SD = 1.571) expressed higher self-efficacy beliefs than teachers with alternative certification training (n = 39, M = 7.08, SD = 1.511). The effect size was calculated by η^2 and found to be .260, which indicates a very large effect size that accounts for approximately 26% of the variance in self-efficacy beliefs can be attributed to type of training.

The test for item 24 “How well can you provide appropriate challenges for the very capable students?” was not statistically significant, t (123) = -.773, p = .441. Levene’s test for equality of variances was met (F = 1.051, p = .307). Teachers with alternative certification training (n = 39, M = 7.56, SD = 1.252) expressed higher self-efficacy beliefs than teachers with college of education training (n = 86, M = 7.35, SD = 1.477). The effect size was calculated by η^2 and found to be -.076, which indicates a moderate effect size that accounts for approximately 8% of the variance in self-efficacy beliefs can be attributed to type of training.

None of the means indicated a statistically significant difference between teachers with college of education training and teachers with alternative certification training. For eight items, the teachers with college of education training reported higher levels of self-efficacy. For sixteen items, the teachers with alternative certification training reported higher levels of self-efficacy. The results of the independent t tests provide evidence that supports the conclusion that there is very little difference in self-efficacy beliefs between teachers with college of education training and teachers with alternative certification training.

Years of Experience

Prior to conducting statistical tests, the seven categories for years of experience as listed on the questionnaire were collapsed into three categories. "Within the first year of teaching," "Completed 1 full year of teaching," and "2-3 full years of teaching" were collapsed into *novice* teacher. "4-5 full years of teaching" and "6-9 full years of teaching" were collapsed into *experienced* teacher. "10-15 years of teaching" and "16 or more years of teaching" were collapsed into *expert* teacher. These descriptors align with Berliner's (2001) model of teaching expertise.

An analysis of variance (ANOVA) test was conducted to determine if expert teachers with ten or more years of teaching experience report higher levels of self-efficacy beliefs than experienced teachers with four to nine years of teaching experience or novice teachers with three or less years of teaching experience. Using SPSS software, each of the twenty-four items based on the Teachers' Sense of Efficacy Scale and each the six items based on training compare to classroom experience were tested. All ANOVA tests were conducted using an alpha of .05. The null hypothesis for each of the items on the questionnaire was that there would be no difference in the means among the teacher groups, thus, the sample means would be equal. The null hypothesis can be represented as: $H = \mu_{novice} = \mu_{experienced} = \mu_{expert}$.

The means for the 24 items from the Teachers' Sense of Efficacy Scale are based on a 9-point Likert scale. The higher the value, the more efficacious the teacher feels about that item. Table 18 depicts the results of the ANOVA and the means for each item.

Table 18

Statistics for Years of Experience: Items 1-24

Questionnaire Item		*SS*	*df*	*MS*	*F*	*sig.*	η^2
1 difficult students	years	1.110	2	.555	.204	.816	.003
	error	332.090	122	2.722			
2 think critically	years	3.410	2	1.705	.876	.419	.014
	error	237.390	122	1.946			
3 disruptive behavior	years	2.060	2	1.030	.579	.562	.009
	error	217.092	122	1.779			
4 motivate low interest	years	3.514	2	1.757	.701	.498	.011
	error	305.934	122	2.508			
5 expectations of behavior	years	.962	2	.481	.469	.627	.008
	error	125.141	122	1.026			
6 do well in school	years	.012	2	.006	.003	.997	.000
	error	238.764	122	1.957			
7 respond to questions	years	2.063	2	1.031	1.005	.369	.016
	error	125.190	122	1.026			
8 establish routines	years	.116	2	.058	.043	.958	.001
	error	164.684	122	1.350			
9 value learning	years	3.057	2	1.528	.648	.525	.011
	error	287.884	122	2.360			
10 gauge comprehension	years	.261	2	.130	.103	.902	.002
	error	153.933	122	1.262			
11 craft questions	years	5.078	2	2.539	1.948	.147	.031
	error	159.030	122	1.304			
12 foster creativity	years	4.271	2	2.135	.935	.395	.015
	error	278.527	122	2.283			
13 follow rules	years	1.805	2	.902	.549	.579	.009
	error	200.387	122	1.643			
14 improve understanding	years	.722	2	.361	.205	.815	.003
	error	215.248	122	1.764			
15 calm noisy students	years	.110	2	.055	.024	.976	.000
	error	275.858	122	2.261			
16 establish management	years	2.851	2	1.425	1.009	.368	.016
	error	172.317	122	1.412			
17 adjust level	years	.410	2	.205	.084	.919	.001
	error	297.606	122	2.439			

Questionnaire Item		*SS*	*df*	*MS*	*F*	*sig.*	η^2
18 variety of assessments	years	2.378	2	1.189	.452	.637	.007
	error	320.957	122	2.631			
19 ruin lesson	years	7.116	2	3.558	1.347	.264	.022
	error	322.273	122	2.642			
20 alternative explanations	years	.257	2	.128	.121	.886	.002
	error	129.332	122	1.060			
21 defiant students	years	.179	2	.089	.038	.963	.001
	error	288.370	122	2.364			
22 assist families	years	9.723	2	4.862	1.581	.210	.025
	error	375.213	122	3.076			
23 implement strategies	years	3.404	2	1.702	.708	.495	.011
	error	293.265	122	2.404			
24 appropriate challenges	years	5.267	2	2.633	1.334	.267	.021
	error	240.927	122	1.975			

The test for item 1 “How much can you do to get through to the most difficult students?” was not statistically significant, $F = .204$, $df = 2, 122$, $p = .816$. Levene’s test ($F = .091$, $df = 2, 122$, $p = .913$) shows there is homogeneity of groups. Novice teachers ($n = 11$, $M = 6.36$, $SD = 1.629$) expressed higher self-efficacy beliefs than experienced teachers ($n = 35$, $M = 6.00$, $SD = 1.645$) or expert teachers ($n = 79$, $M = 6.08$, $SD = 1.655$). The η^2 (.003) reveals that less than 1% of the variance in self-efficacy beliefs can be accounted for by years of teaching experience. This would indicate a very small effect size.

The test for item 2 “How much can you do to help your students think critically?” was not statistically significant, $F = .876$, $df = 2, 122$, $p = .419$. Levene’s test ($F = .070$, $df = 2, 122$, $p = .932$) shows there is homogeneity of groups. Experienced teachers ($n = 36$, $M = 6.97$, $SD = 1.382$) expressed higher self-efficacy beliefs than expert teachers ($n = 79$, $M = 6.72$, $SD = 1.395$) or novice teachers ($n = 11$, $M = 6.36$, $SD = 1.433$). The η^2 (.014) reveals that approximately 1%

of the variance in self-efficacy beliefs can be accounted for by years of teaching experience. This would indicate a very small effect size.

The test for item 3 “How much can you do to control disruptive behavior in the classroom?” was not statistically significant, $F = .579$, $df = 2, 122$, $p = .562$. Levene’s test ($F = .283$, $df = 2, 122$, $p = .754$) shows there is homogeneity of groups. Novice teachers ($n = 11$, $M = 7.73$, $SD = 1.272$) expressed higher self-efficacy beliefs than experienced teachers ($n = 35$, $M = 7.69$, $SD = 1.345$) or expert teachers ($n = 79$, $M = 7.43$, $SD = 1.337$). The η^2 (.009) reveals that approximately 1% of the variance in self-efficacy beliefs can be accounted for by years of teaching experience. This would indicate a very small effect size.

The test for item 4 “How much can you do to motivate students who show low interest in school work?” was not statistically significant, $F = .701$, $df = 2, 122$, $p = .498$. Levene’s test ($F = .170$, $df = 2, 122$, $p = .844$) shows there is homogeneity of groups. Novice teachers ($n = 11$, $M = 6.006$, $SD = 1.414$) expressed higher self-efficacy beliefs than expert teachers ($n = 79$, $M = 5.73$, $SD = 1.607$) or experienced teachers ($n = 35$, $M = 5.43$, $SD = 1.577$). The η^2 (.011) reveals that approximately 1% of the variance in self-efficacy beliefs can be accounted for by years of teaching experience. This would indicate a very small effect size.

The test for item 5 “To what extent can you make your expectations clear about student behavior?” was not statistically significant, $F = .469$, $df = 2, 122$, $p = .627$. Levene’s test ($F = 1.432$, $df = 2, 122$, $p = .243$) shows there is homogeneity of groups. Experienced teachers ($n = 35$, $M = 8.31$, $SD = .900$) expressed higher self-efficacy beliefs than novice teachers ($n = 11$, $M = 8.18$, $SD = .874$) or expert teachers ($n = 79$, $M = 8.12$, $SD = 1.074$). The η^2 (.008) reveals that less than 1% of the variance in self-efficacy beliefs can be accounted for by years of teaching

experience. This would indicate a very small effect size.

The test for item 6 “How much can you do to get students to believe they can do well in school work?” was not statistically significant, $F = .003$, $df = 2, 122$, $p = .997$. Levene’s test ($F = 2.803$, $df = 2, 122$, $p = .065$) shows there is homogeneity of groups. Expert teachers ($n = 79$, $M = 6.85$, $SD = 1.350$) expressed higher self-efficacy beliefs than experienced teachers ($n = 35$, $M = 6.83$, $SD = 1.361$) or novice teachers ($n = 11$, $M = 6.82$, $SD = 1.834$). The η^2 (.000) reveals that none of the variance in self-efficacy beliefs can be accounted for by years of teaching experience.

The test for item 7 “How well can you respond to difficult questions from your students?” was not statistically significant, $F = .204$, $df = 2, 122$, $p = .816$. Levene’s test ($F = .091$, $df = 2, 122$, $p = .913$) shows there is homogeneity of groups. Expert teachers ($n = 79$, $M = 7.82$, $SD = 1.022$) expressed higher self-efficacy beliefs than experienced teachers ($n = 35$, $M = 7.71$, $SD = .987$) or novice teachers ($n = 11$, $M = 7.38$, $SD = 1.027$). The η^2 (.016) reveals that nearly 2% of the variance in self-efficacy beliefs can be accounted for by years of teaching experience. This would indicate a very small effect size.

The test for item 8 “How well can you establish routines to keep activities running smoothly?” was not statistically significant, $F = .043$, $df = 2, 122$, $p = .958$. Levene’s test ($F = .339$, $df = 2, 122$, $p = .713$) shows there is homogeneity of groups. Expert teachers ($n = 79$, $M = 8.06$, $SD = 1.136$) expressed higher self-efficacy beliefs than experienced teachers ($n = 35$, $M = 8.00$, $SD = 1.237$) or novice teachers ($n = 11$, $M = 8.00$, $SD = 1.095$). The η^2 (.001) reveals that less than 1% of the variance in self-efficacy beliefs can be accounted for by years of teaching experience. This would indicate a very small effect size.

The test for item 9 “How much can you do to help your students value learning?” was not statistically significant, $F = .204$, $df = 2, 122$, $p = .816$. Levene’s test ($F = .690$, $df = 2, 122$, $p = .503$) shows there is homogeneity of groups. Novice teachers ($n = 11$, $M = 6.55$, $SD = 1.214$) expressed higher self-efficacy beliefs than expert teachers ($n = 79$, $M = 6.46$, $SD = 1.616$) or experienced teachers ($n = 35$, $M = 6.12$, $SD = 1.430$). The η^2 (.011) reveals that approximately 1% of the variance in self-efficacy beliefs can be accounted for by years of teaching experience. This would indicate a very small effect size.

The test for item 10 “How much can you gauge student comprehension of what you have taught?” was not statistically significant, $F = .103$, $df = 2, 122$, $p = .902$. Levene’s test ($F = .925$, $df = 2, 122$, $p = .399$) shows there is homogeneity of groups. Experienced teachers ($n = 35$, $M = 7.49$, $SD = 1.197$) expressed higher self-efficacy beliefs than novice teachers ($n = 11$, $M = 7.45$, $SD = .820$) or expert teachers ($n = 79$, $M = 7.39$, $SD = 1.124$). The η^2 (.003) reveals that less than 1% of the variance in self-efficacy beliefs can be accounted for by years of teaching experience. This would indicate a very small effect size.

The test for item 11 “To what extent can you craft good questions for your students?” was not statistically significant, $F = 1.948$, $df = 2, 122$, $p = .147$. Levene’s test ($F = .333$, $df = 2, 122$, $p = .717$) shows there is homogeneity of groups. Experienced teachers ($n = 35$, $M = 7.64$, $SD = 1.160$) expressed higher self-efficacy beliefs than expert teachers ($n = 79$, $M = 7.61$, $SD = 1.100$) or novice teachers ($n = 11$, $M = 6.918$, $SD = 1.375$). The η^2 (.031) reveals that approximately 3% of the variance in self-efficacy beliefs can be accounted for by years of teaching experience. This would indicate a fairly small effect size.

The test for item 12 “How much can you do to foster creativity?” was not statistically

significant, $F = .935$, $df = 2, 122$, $p = .395$. Levene's test ($F = 2.440$, $df = 2, 122$, $p = .091$) shows there is homogeneity of groups. Experienced teachers ($n = 35$, $M = 6.71$, $SD = 1.363$) expressed higher self-efficacy beliefs than expert teachers ($n = 79$, $M = 6.54$, $SD = 1.491$) or novice teachers ($n = 11$, $M = 6.00$, $SD = 2.049$). The η^2 (.015) reveals that more than 1% of the variance in self-efficacy beliefs can be accounted for by years of teaching experience. This would indicate a very small effect size.

The test for item 13 "How much can you do to get children to follow the classroom rules?" was not statistically significant, $F = .549$, $df = 2, 122$, $p = .579$. Levene's test ($F = 2.255$, $df = 2, 122$, $p = .109$) shows there is homogeneity of groups. Expert teachers ($n = 79$, $M = 7.68$, $SD = 1.225$) expressed higher self-efficacy beliefs than novice teachers ($n = 11$, $M = 7.45$, $SD = .934$) or experienced teachers ($n = 35$, $M = 7.43$, $SD = 1.481$). The η^2 (.009) reveals that approximately 1% of the variance in self-efficacy beliefs can be accounted for by years of teaching experience. This would indicate a very small effect size.

The test for item 14 "How much can you do to improve the understanding of a student who is failing?" was not statistically significant, $F = .205$, $df = 2, 122$, $p = .8156$. Levene's test ($F = .905$, $df = 2, 122$, $p = .407$) shows there is homogeneity of groups. Novice teachers ($n = 11$, $M = 6.36$, $SD = 1.362$) expressed higher self-efficacy beliefs than experienced teachers ($n = 35$, $M = 6.47$, $SD = 1.118$) or expert teachers ($n = 79$, $M = 6.29$, $SD = 1.406$). The η^2 (.003) reveals that less than 1% of the variance in self-efficacy beliefs can be accounted for by years of teaching experience. This would indicate a very small effect size.

The test for item 15 "How much can you do to calm a student who is disruptive or noisy?" was not statistically significant, $F = .204$, $df = 2, 122$, $p = .976$. Levene's test ($F = 1.570$,

df = 2, 122, *p* = .212) shows there is homogeneity of groups. Expert teachers (*n* = 79, *M* = 7.04, *SD* = 1.480) expressed higher self-efficacy beliefs than novice teachers (*n* = 11, *M* = 7.00, *SD* = 1.265) or experienced teachers (*n* = 35, *M* = 6.97, *SD* = 1.618). The η^2 (.000) reveals that none of the variance in self-efficacy beliefs can be accounted for by years of teaching experience.

The test for item 16 "How well can you establish a classroom management system with each group of students?" was not statistically significant, *F* = 1.0094, *df* = 2, 122, *p* = .368. Levene's test (*F* = .082, *df* = 2, 122, *p* = .921) shows there is homogeneity of groups. Expert teachers (*n* = 79, *M* = 7.90, *SD* = 1.183) expressed higher self-efficacy beliefs than experienced teachers (*n* = 35, *M* = 7.60, *SD* = 1.193) or novice teachers (*n* = 11, *M* = 7.55, *SD* = 1.214). The η^2 (.016) reveals that nearly 2% of the variance in self-efficacy beliefs can be accounted for by years of teaching experience. This would indicate a very small effect size.

The test for item 17 "How much can you do to adjust your lesson to the proper level for individual students?" was not statistically significant, *F* = .084, *df* = 2, 122, *p* = .919. Levene's test (*F* = .145, *df* = 2, 122, *p* = .865) shows there is homogeneity of groups. Novice teachers (*n* = 11, *M* = 7.09, *SD* = 1.300) expressed higher self-efficacy beliefs than experienced teachers (*n* = 35, *M* = 6.91, *SD* = 1.738) or expert teachers (*n* = 79, *M* = 6.88, *SD* = 1.510). The η^2 (.001) reveals that less than 1% of the variance in self-efficacy beliefs can be accounted for by years of teaching experience. This would indicate a very small effect size.

The test for item 18 "How much can use a variety of assessment strategies?" was not statistically significant, *F* = .452, *df* = 2, 122, *p* = .637. Levene's test (*F* = 1.005, *df* = 2, 122, *p* = .369) shows there is homogeneity of groups. Experienced teachers (*n* = 35, *M* = 7.55, *SD* = 1.519) expressed higher self-efficacy beliefs than expert teachers (*n* = 79, *M* = 7.26, *SD* = 1.720)

or novice teachers (n = 11, M = 7.18, SD = 1.079). The η^2 (.007) reveals that less than 1% of the variance in self-efficacy beliefs can be accounted for by years of teaching experience. This would indicate a very small effect size.

The test for item 19 "How well can you keep a few problem children from ruining an entire lesson?" was not statistically significant, F = 1.347, df = 2, 122, p = .264. Levene's test (F = 2.5501, df = 2, 122, p = .082) shows there is homogeneity of groups. Novice teachers (n = 11, M = 7.45, SD = 1.214) expressed higher self-efficacy beliefs than expert teachers (n = 79, M = 7.27, SD = 1.525) or experienced teachers (n = 35, M = 6.77, SD = 1.926). The η^2 (.022) reveals that approximately 2% of the variance in self-efficacy beliefs can be accounted for by years of teaching experience. This would indicate a very small effect size.

The test for item 20 "To what extent can you provide an alternative explanations or example when students are confused?" was not statistically significant, F = .121, df = 2, 122, p = .886. Levene's test (F = .0271, df = 2, 122, p = .973) shows there is homogeneity of groups. Experienced teachers (n = 356, M = 7.81, SD = 1.070) expressed higher self-efficacy beliefs than expert teachers (n = 79, M = 7.77, SD = 1.012) or novice teachers (n = 11, M = 7.64, SD = 1.027). The η^2 (.002) reveals that less than 1% of the variance in self-efficacy beliefs can be accounted for by years of teaching experience. This would indicate a very small effect size.

The test for item 21 "How well can you respond to defiant students?" was not statistically significant, F = .038, df = 2, 122, p = .963. Levene's test (F = .1341, df = 2, 122, p = .8753) shows there is homogeneity of groups. Experienced teachers (n = 35, M = 7.23, SD = 1.456) expressed higher self-efficacy beliefs than expert teachers (n = 79, M = 7.22, SD = 1.558) or novice teachers (n = 11, M = 7.09, SD = 1.640). The η^2 (.001) reveals that less than 1% of the

variance in self-efficacy beliefs can be accounted for by years of teaching experience. This would indicate a very small effect size.

The test for item 22 "How much can you assist families in helping their children do well in school?" was not statistically significant, $F = 1.581$, $df = 2, 122$, $p = .210$. Levene's test ($F = 1.107$, $df = 2, 122$, $p = .334$) shows there is homogeneity of groups. Novice teachers ($n = 11$, $M = 6.33$, $SD = 1.303$) expressed higher self-efficacy beliefs than expert teachers ($n = 79$, $M = 5.68$, $SD = 1.758$) or experienced teachers ($n = 35$, $M = 5.29$, $SD = 1.856$). The η^2 (.025) reveals that nearly 3% of the variance in self-efficacy beliefs can be accounted for by years of teaching experience. This would indicate a small effect size.

The test for item 23 "How well can you implement alternative strategies in your classroom?" was not statistically significant, $F = .708$, $df = 2, 122$, $p = .495$. Levene's test ($F = .523$, $df = 2, 122$, $p = .594$) shows there is homogeneity of groups. Experienced teachers ($n = 35$, $M = 7.35$, $SD = 1.373$) expressed higher self-efficacy beliefs than novice teachers ($n = 11$, $M = 7.27$, $SD = 1.348$) or expert teachers ($n = 79$, $M = 7.01$, $SD = 1.645$). The η^2 (.011) reveals that approximately 1% of the variance in self-efficacy beliefs can be accounted for by years of teaching experience. This would indicate a very small effect size.

The test for item 24 "How well can you provide appropriate challenges for the very capable students?" was not statistically significant, $F = 1.334$, $df = 2, 122$, $p = .267$. Levene's test ($F = .023$, $df = 2, 122$, $p = .977$) shows there is homogeneity of groups. Experienced teachers ($n = 35$, $M = 7.61$, $SD = 1.373$) expressed higher self-efficacy beliefs than expert teachers ($n = 79$, $M = 7.42$, $SD = 1.402$) or novice teachers ($n = 11$, $M = 6.82$, $SD = 1.537$). The η^2 (.021) reveals that less than 2% of the variance in self-efficacy beliefs can be accounted for by years of

teaching experience. This would indicate a very small effect size.

None of the means indicated a statistically significant difference between novice teachers, experienced teachers, and expert teachers. For eight items, the novice teachers reported higher self-efficacy beliefs; for ten items, the experienced teachers reported higher self-efficacy beliefs; and for 6 items, the expert teachers reported higher self-efficacy beliefs. The results of the ANOVA tests provide evidence that supports the conclusion that there are few differences among the self-efficacy beliefs of teachers with varying levels of classroom experience.

Using the *t*-test analyses for college of education training and alternative certification training and the ANOVA tests for novice, experienced, and expert years of experience, Table 19 illustrates the means for type of teacher training and for number of years of experience for each questionnaire item. The responses are based on a 9-point Likert scale.

Table 19

Means for Self-Efficacy: Items 1-24

		Means and (standard deviations)					
	Questionnaire Item	*All Participants*	*College of Education*	*Alternative Certification*	*Novice*	*Experienced*	*Expert*
1	How much can you do to get through to the most difficult students?	6.08 (1.639)	6.09 (1.699)	6.05 (1.521)	6.36 (1.629)	6.00 (1.645)	6.08 (1.655)
2	How much can you do to help your students think critically?	6.76 (1.394)	6.74 (1.497)	6.79 (1.151)	6.36 (1.433)	6.97 (1.382)	6.72 (1.395)
3	How much can you do to control disruptive behavior in the classroom?	7.53 (1.329)	7.51 (1.225)	7.56 (1.553)	7.73 (1.272)	7.69 (1.345)	7.43 (1.337)
4	How much can you do to motivate students who show low interest in school work?	5.67 (1.580)	5.69 (1.618)	5.63 (1.512)	6.00 (1.414)	5.43 (1.577)	5.73 (1.607)
5	To what extent can you make your expectations clear about student behavior?	8.18 (1.008)	8.26 (.923)	8.00 (1.170)	8.18 (.874)	8.31 (.900)	8.12 (1.074)
6	How much can you do to get students to believe they can do well in school work?	6.84 (1.388)	6.74 (1.339)	7.05 (1.486)	6.82 (1.834)	6.83 (1.361)	6.85 (1.350)
7	How well can you respond to difficult questions from your students?	7.75 (1.013)	7.76 (1.070)	7.72 (.887)	7.36 (1.027)	7.71 (.987)	7.82 (1.022)
8	How well can you establish routines to keep activities running smoothly?	8.04 (1.153)	8.01 (1.111)	8.10 (1.252)	8.00 (1.095)	8.00 (1.237)	8.06 (1.136)
9	How much can you do to help your students value learning?	6.37 (1.532)	6.31 (1.495)	6.51 (1.620)	6.55 (1.214)	6.12 (1.430)	6.46 (1.616)
10	How much can you gauge comprehension of what you have taught?	7.42 (1.115)	7.38 (1.198)	7.51 (.914)	7.45 (.820)	7.49 (1.197)	7.39 (1.124)
11	To what extent can you craft good questions for your students?	7.56 (1.150)	7.62 (1.176)	7.41 (1.093)	6.91 (1.375)	7.64 (1.160)	7.61 (1.100)
12	How much can you do to foster creativity?	6.54 (1.510)	6.47 (1.452)	6.69 (1.641)	6.00 (2.049)	6.71 (1.363)	6.54 (1.491)
13	How much can you do to get students to follow classroom rules?	7.59 (1.277)	7.53 (1.234)	7.72 (1.376)	7.45 (.934)	7.43 (1.481)	7.68 (1.225)
14	How much can you do to improve the understanding of a student who is failing?	6.35 (1.320)	6.21 (1.379)	6.67 (1.132)	6.36 (1.362)	6.47 (1.118)	6.29 (1.406)
15	How much can you do to calm a student who is disruptive or noisy?	7.02 (1.492)	6.93 (1.454)	7.21 (1.576)	7.00 (1.265)	6.97 (1.618)	7.04 (1.480)
16	How well can you establish a classroom management system with each group of students?	7.78 (1.189)	7.74 (1.200)	7.87 (1.174)	7.55 (1.214)	7.60 (1.193)	7.90 (1.183)

		Means and (standard deviations)					
	Questionnaire Item	*All Participants*	*College of Education*	*Alternative Certification*	*Novice*	*Experienced*	*Expert*
17	How much can you do to adjust your lessons to the proper level for individual students?	6.91 (1.550)	6.94 (1.498)	6.85 (1.679)	7.09 (1.300)	6.91 (1.738)	6.88 (1.510)
18	How much can you use a variety of assessment strategies?	7.33 (1.615)	7.25 (1.637)	7.51 (1.571)	7.18 (1.079)	7.55 (1.519)	7.26 (1.720)
19	How well can you keep a few problem students from ruining an entire lesson?	7.14 (1.630)	7.16 (1.454)	7.10 (1.984)	7.45 (1.214)	6.77 (1.926)	7.27 (1.525)
20	To what extent can you provide an alternative explanation or example when students are confused?	7.77 (1.022)	7.73 (1.010)	7.86 (1.056)	7.64 (1.027)	7.81 (1.070)	7.77 (1.012)
21	How well can you respond to defiant students?	7.21 (1.525)	7.20 (1.454)	7.23 (1.693)	7.09 (1.640)	7.23 (1.156)	7.22 (1.558)
22	How much can you assist families in helping their children do well in school?	5.63 (1.762)	5.53 (1.754)	5.84 (1.785)	6.33 (1.303)	5.29 (1.856)	5.68 (1.758)
23	How well can you implement alternative strategies in your classroom?	7.14 (1.547)	7.16 (1.571)	7.08 (1.511)	7.27 (1.348)	7.37 (1.373)	7.01 (1.645)
24	How well can you provide appropriate challenges for very capable students?	7.42 (1.409)	7.35 (1.477)	7.56 (1.252)	6.82 (1.537)	7.61 (1.373)	7.42 (1.402)

Gender

Tschannen-Moran and Woolfolk Hoy (2001; 2007) have established through repeated use of the Teachers' Sense of Efficacy Scale that there is no relationship between gender and self-efficacy beliefs. Wheatley (2005) also confirmed there is no relationship with his own research. However, independent sample *t* tests were conducted to determine whether or not the current sample of high school teachers from Brevard County would differ based on gender. All *t*-tests were conducted using an alpha of .05. The null hypothesis for each of the items on the questionnaire was that there would be no difference in the means between teacher groups, thus,

the sample means would be equal. The null hypothesis can be represented as: $H = \mu_{male} = \mu_{female}$.

The assumption of normality was tested. A review of the Shipiro-Wilk's test of normality indicated that all items were statistically significant at the .05 level. The skewness and kurtosis statistics were within the +/-1 range for both the male and female teachers for the majority of items. Six items revealed a skewness or kurtosis statistic within the +/-2 range: establishing routines, value learning, gauge comprehension, calm noisy students, establish management system, and ruin a lesson. Only one item, using a variety of assessments, revealed both skewness and kurtosis statistics that might indicate normality was not a reasonable assumption. However, based on the Central Limit Theorem, independent t tests are generally robust to violations of normality if the sample size is large.

The means for the 24 items from the Teachers' Sense of efficacy Scale are based on a 9-point Likert scale. The higher the value, the more efficacious the teacher feels about that item. Table 20 depicts the results of the t-tests and the means for each item.

Table 20

Statistics for Gender: Items 1-24

				Male		*Female*	
Questionnaire Item	*t*	*df*	*p*	*M*	*SD*	*M*	*SD*
1 difficult students	-1.561	123	.121	5.72	1.427	6.22	1.704
2 think critically	-1.187	123	.238	6.53	1.502	6.85	1.345
3 disruptive behavior	-.892	123	.374	7.36	1.477	7.60	1.268
4 motivate low interest	-1.187	123	.238	5.41	1.792	5.78	1.483
5 expectations of behavior	-3.194	123	* .002	7.69	1.142	8.37	.884
6 do well in school	-.338	123	.736	6.77	1.333	6.87	1.416
7 respond to questions	.391	123	.696	7.81	1.091	7.73	.985
8 establish routines	-2.688	123	* .010	7.56	1.382	8.24	.989
9 value learning	-.390	123	.697	6.29	1.523	6.40	1.543
10 gauge comprehension	-1.546	123	.125	7.18	1.083	7.52	1.119
11 craft questions	-2.921	123	* .004	7.10	1.158	7.74	1.100
12 foster creativity	-2.323	123	* .022	6.06	1.603	6.74	1.434
13 follow rules	-1.765	123	.080	7.28	1.446	7.72	1.187
14 improve understanding	-.983	123	.327	6.17	1.342	6.42	1.311
15 calm noisy students	-.340	123	.735	6.94	1.585	7.04	1.461
16 establish management	-1.884	123	.062	7.47	1.253	7.91	1.145
17 adjust level	-.747	123	.456	6.75	1.662	6.98	1.507
18 variety of assessments	-1.348	123	.180	7.03	1.521	7.46	1.643
19 ruin lesson	-.146	123	.884	7.11	1.508	7.16	1.685
20 alternative explanations	-.632	123	.529	7.68	1.062	7.81	1.010
21 defiant students	.446	123	.656	7.31	1.582	7.17	1.509
22 assist families	.448	123	.627	5.75	1.842	5.58	1.737
23 implement strategies	-1.532	123	.128	6.81	1.670	7.27	1.483
24 appropriate challenges	-1.853	123	.066	7.06	1.433	7.57	1.380

* $p < .05$

The test for item 1 “How much can you do to get through to the most difficult students?” was not statistically significant, t (123) = -1.561, p = .121. Levene’s test for equality of variances was met (F = 2.414, p = .123). Female teachers (n = 89, M = 6.22, SD = 1.704) expressed higher self-efficacy beliefs than male teachers (n = 36, M = 5.72, SD = 1.427). The effect size was

calculated by η^2 and found to be -.157, which indicates a large effect size that accounts for approximately 15% of the variance in self-efficacy beliefs can be attributed to gender.

The test for item 2 "How much can you do to help your students think critically?" was not statistically significant, t (123) = -1.187, p = .238. Levene's test for equality of variances was met (F = 1.3516, p = .247). Female teachers (n = 89, M = 6.85, SD = 1.345) expressed higher self-efficacy beliefs than male teachers (n = 36, M = 6.53, SD = 1.502). The effect size was calculated by η^2 and found to be -.112, which indicates a fairly large effect size that accounts for approximately 11% of the variance in self-efficacy beliefs can be attributed to gender.

The test for item 3 "How much can you do to control disruptive behavior in the classroom?" was not statistically significant, t (123) = 1.234, p = .269. Levene's test for equality of variances was met (F = 1.690, p = .196). Female teachers (n = 89, M = 7.60, SD = 1.268) expressed higher self-efficacy beliefs than male teachers (n = 36, M = 7.36, SD = 1.477). The effect size was calculated by η^2 and found to be -.087, which indicates a moderate effect size that accounts for approximately 8% of the variance in self-efficacy beliefs can be attributed to gender.

The test for item 4 "How much can you do to motivate students who show low interest in school work?" was not statistically significant, t (123) = -1.187, p = .238. Levene's test for equality of variances was met (F = .599, p = .440). Female teachers (n = 89, M = 5.78, SD = 1.483) expressed higher self-efficacy beliefs than male teachers (n = 36, M = 5.41, SD = 1.792). The effect size was calculated by η^2 and found to be -.112, which indicates a fairly large effect size that accounts for approximately 11% of the variance in self-efficacy beliefs can be attributed to gender.

The test for item 5 “To what extent can you make your expectations clear about student behavior?” revealed a statistically significant difference, t (123) = -3.194, p = .002. Levene’s test for equality of variances cannot be assumed (F = 4.218, p = .042). Female teachers (n = 89, M = 8.37, SD = .884) expressed higher self-efficacy beliefs than male teachers (n = 36, M = 7.69, SD = 1.142). The effect size was calculated by η^2 and found to be -.316, which indicates a very large effect size that accounts for approximately 31% of the variance in self-efficacy beliefs can be attributed to gender.

The test for item 6 “How much can you do to get students to believe they can do well in school work?” was not statistically significant, t (123) = -.338, p = .736. Levene’s test for equality of variances was met (F = .045, p = .832). Female teachers (n = 89, M = 6.87, SD = 1.416) expressed higher self-efficacy beliefs than male teachers (n = 36, M = 6.77, SD = 1.333). The effect size was calculated by η^2 and found to be -.036, which indicates a small effect size that accounts for approximately 3% of the variance in self-efficacy beliefs can be attributed to gender.

The test for item 7 “How well can you respond to difficult questions from your students?” was not statistically significant, t (123) = .391, p = .696. Levene’s test for equality of variances was met (F = .308, p = .580). Male teachers (n = 36, M = 7.81, SD = 1.091) expressed higher self-efficacy beliefs than female teachers (n = 89, M = 7.73, SD = .985). The effect size was calculated by η^2 and found to be .038, which indicates a moderate effect size that accounts for approximately 4% of the variance in self-efficacy beliefs can be attributed to gender.

The test for item 8 “How well can you establish routines to keep activities running smoothly?” revealed a statistically significant difference, t (123) = -2.688, p = .010. Levene’s test

for equality of variances cannot be assumed (F = 9.946, p = .002). Female teachers (n = 89, M = 8.24, SD = .989) expressed higher self-efficacy beliefs than male teachers (n = 36, M = 7.56, SD = 1.382). The effect size was calculated by η^2 and found to be -.272, which indicates a very large effect size that accounts for approximately 27% of the variance in self-efficacy beliefs can be attributed to gender.

The test for item 9 "How much can you do to help your students value learning?" was not statistically significant, t (123) = -.390, p = .697. Levene's test for equality of variances was met (F = .371, p = .543). Female teachers (n = 89, M = 6.40, SD = 1.543) expressed higher self-efficacy beliefs than male teachers (n = 36, M = 6.29, SD = 1.523). The effect size was calculated by η^2 and found to be -.358, which indicates a very large effect size that accounts for approximately 36% of the variance in self-efficacy beliefs can be attributed to gender.

The test for item 10 "How much can you gauge student comprehension of what you have taught?" was not statistically significant, t (123) = -1.546, p = .125. Levene's test for equality of variances was met (F = .351, p = .555). Female teachers (n = 89, M = 7.52, SD = 1.119) expressed higher self-efficacy beliefs than male teachers (n = 36, M = 7.18, SD = 1.083). The effect size was calculated by η^2 and found to be -.153, which indicates a large effect size that accounts for approximately 15% of the variance in self-efficacy beliefs can be attributed to gender.

The test for item 11 "To what extent can you craft good questions for your students?" revealed a statistically significant difference, t (123) = -2.921, p = .004. Levene's test for equality of variances was met (F = .981, p = .324). Female teachers (n = 89, M = 7.74, SD = 1.100) expressed higher self-efficacy beliefs than male teachers (n = 36, M = 7.10, SD = 1.158).

The effect size was calculated by η^2 and found to be .273, which indicates a very large effect size that accounts for approximately 27% of the variance in self-efficacy beliefs can be attributed to gender.

The test for item 12 "How much can you do to foster creativity?" revealed a statistically significant difference, t (123) = -2.323, p = .022. Levene's test for equality of variances was met (F = 1.408, p = .238). Female teachers (n = 89, M = 6.74, SD = 1.434) expressed higher self-efficacy beliefs than male teachers (n = 36, M = 6.062, SD = 1.603). The effect size was calculated by η^2 and found to be -.218, which indicates a very large effect size that accounts for approximately 21% of the variance in self-efficacy beliefs can be attributed to gender.

The test for item 13 "How much can you do to get children to follow the classroom rules?" was not statistically significant, t (123) = -1.765, p = .080. Levene's test for equality of variances was met (F = .728, p = .395). Female teachers (n = 89, M = 7.72, SD = 1.187) expressed higher self-efficacy beliefs than male teachers (n = 36, M = 7.28, SD = 1.446). The effect size was calculated by η^2 and found to be -.164, which indicates a large effect size that accounts for approximately 16% of the variance in self-efficacy beliefs can be attributed to gender.

The test for item 14 "How much can you do to improve the understanding of a student who is failing?" was not statistically significant, t (123) = -.983, p = .327. Levene's test for equality of variances was met (F = .049, p = .825). Female teachers (n = 89, M = 6.422, SD = 1.311) expressed higher self-efficacy beliefs than male teachers (n = 36, M = 6.17, SD = 1.342). The effect size was calculated by η^2 and found to be -.094, which indicates a fairly large effect size that accounts for approximately 9% of the variance in self-efficacy beliefs can be attributed

to gender.

The test for item 15 “How much can you do to calm a student who is disruptive or noisy?” was not statistically significant, t (123) = -.340, p = .735. Levene’s test for equality of variances was met (F = 1.900, p = .171). Female teachers (n = 89, M = 7.04, SD = 1.461) expressed higher self-efficacy beliefs than male teachers (n = 36, M = 6.94, SD = 1.585). The effect size was calculated by η^2 and found to be -.033, which indicates a small effect size that accounts for approximately 3% of the variance in self-efficacy beliefs can be attributed to gender.

The test for item 16 “How well can you establish a classroom management system with each group of students?” was not statistically significant, t (123) = -1.884, p = .062. Levene’s test for equality of variances was met (F = .923, p = .339). Female teachers (n = 89, M = 7.91, SD = 1.145) expressed higher self-efficacy beliefs than male teachers (n = 36, M = 7.47, SD = 1.253). The effect size was calculated by η^2 and found to be -.180, which indicates a very large effect size that accounts for approximately 18% of the variance in self-efficacy beliefs can be attributed to gender.

The test for item 17 “How much can you do to adjust your lesson to the proper level for individual students?” was not statistically significant, t (123) = -.747, p = .456. Levene’s test for equality of variances was met (F = .068, p = .795). Female teachers (n = 89, M = 6.98, SD = 1.507) expressed higher self-efficacy beliefs than male teachers (n = 36, M = 6.75, SD = 1.662). The effect size was calculated by η^2 and found to be .072, which indicates a moderate effect size that accounts for approximately 7% of the variance in self-efficacy beliefs can be attributed to gender.

The test for item 18 “How much can use a variety of assessment strategies?” was not statistically significant, t (123) = -1.348, p = .180. Levene’s test for equality of variances was met (F = .123, p = .727). Female teachers (n = 89, M = 7.46, SD = 1.643) expressed higher self-efficacy beliefs than male teachers (n = 36, M = 7.03, SD = 1.521). The effect size was calculated by η^2 and found to be -.135, which indicates a large effect size that accounts for approximately 13% of the variance in self-efficacy beliefs can be attributed to gender.

The test for item 19 “How well can you keep a few problem children from ruining an entire lesson?” was not statistically significant, t (123) = -.146, p = .884. Levene’s test for equality of variances cannot be assumed (F = .135, p = .714). Female teachers (n = 89, M = 7.16, SD = 1.685) expressed higher self-efficacy beliefs than male teachers (n = 36, M = 7.11, SD = 1.508). The effect size was calculated by η^2 and found to be .016, which indicates a smaller effect size that accounts for approximately 2% of the variance in self-efficacy beliefs can be attributed to gender.

The test for item 20 “To what extent can you provide an alternative explanation or example when students are confused?” was not statistically significant, t (123) = -.632, p = .529. Levene’s test for equality of variances was met (F = .001, p = .980). Female teachers (n = 89, M = 7.81, SD = 1.010) expressed higher self-efficacy beliefs than male teachers (n = 36, M = 7.68, SD = 1.062). The effect size was calculated by η^2 and found to be -.063, which indicates a moderate effect size that accounts for approximately 6% of the variance in self-efficacy beliefs can be attributed to gender.

The test for item 21 “How well can you respond to defiant students?” was not statistically significant, t (123) = .446, p = .6567. Levene’s test for equality of variances was met (F = .172,

p = .679). Male teachers (n = 36, M = 7.31, SD = 1.582) expressed higher self-efficacy beliefs than female teachers (n = 89, M = 7.17, SD = 1.509). The effect size was calculated by η^2 and found to be .045, which indicates a moderate effect size that accounts for approximately 5% of the variance in self-efficacy beliefs can be attributed to gender.

The test for item 22 "How much can you assist families in helping their children do well in school?" was not statistically significant, t (123) = .488, p = .627. Levene's test for equality of variances was met (F = .264, p = .608). Male teachers (n = 36, M = 5.75, SD = 1.842) expressed higher self-efficacy beliefs than female teachers (n = 89, M = 5.58, SD = 1.737). The effect size was calculated by η^2 and found to be .047, which indicates a moderate effect size that accounts for approximately 5% of the variance in self-efficacy beliefs can be attributed to gender.

The test for item 23 "How well can you implement alternative strategies in your classroom?" was not statistically significant, t (123) = -1.532, p = .128. Levene's test for equality of variances was met (F = .002, p = .961). Female teachers (n = 89, M = 7.27, SD = 1.483) expressed higher self-efficacy beliefs than male teachers (n = 36, M = 6.81, SD = 1.670). The effect size was calculated by η^2 and found to be -.144, which indicates a large effect size that accounts for approximately 14% of the variance in self-efficacy beliefs can be attributed to gender.

The test for item 24 "How well can you provide appropriate challenges for the very capable students?" was not statistically significant, t (123) = -1.853, p = .066. Levene's test for equality of variances was met (F = .075, p = .784). Female teachers (n = 89, M = 7.57, SD = 1.380) expressed higher self-efficacy beliefs than male teachers (n = 36, M = 7.06, SD = 1.433). The effect size was calculated by η^2 and found to be -.178, which indicates a very large effect

size that accounts for approximately 18% of the variance in self-efficacy beliefs can be attributed to gender.

Four of the 24 items on the questionnaire indicated a statistically significant difference between male and female teachers. Overall, the females reported significantly higher self-efficacy beliefs for "expectations of behavior," "establishing routines," "crafting good questions," and "fostering creativity." For 21 items, the female teachers reported higher levels of self-efficacy. The male teachers reported higher levels of self-efficacy for only three items: responding to difficult questions, controlling defiant students, and assisting families. The results of the independent *t* tests provide evidence that supports the conclusion that there is not much difference in self-efficacy beliefs between male and female teachers.

Racial-Ethnic Background

Prior to conducting statistical tests, the six categories for racial-ethnic background as listed on the questionnaire were collapsed into four categories. White, Black and Hispanic were retained as descriptors. "Asian," "American Indian/Pacific Islander," and "multi-racial" were collapsed into *all others*. Three participants did not chose an identifier, so they were grouped within the *all others* descriptor.

Tschannen-Moran and Woolfolk Hoy (2001; 2007) have established through repeated use of the Teachers' Sense of Efficacy Scale that there is no relationship between racial-ethnic background and self-efficacy beliefs. Wheatley (2005) also confirmed there is no relationship with his own research. However, an analysis of variance (ANOVA) was conducted to determine if racial-ethnic background played a role in the self-efficacy beliefs of teachers. Using SPSS software, each of the twenty-four items based on the Teachers' Sense of Efficacy Scale and each

the six items based on training compare to classroom experience were tested. All ANOVA tests were conducted using an alpha of .05. The null hypothesis for each of the items on the questionnaire was that there would be no difference in the means among the teacher groups, thus, the sample means would be equal. The null hypothesis can be represented as: $H = \mu_{white} = \mu_{black} = \mu_{hispanic} = \mu_{other}$.

The means for the 24 items from the Teachers' Sense of efficacy Scale are based on a 9-point Likert scale. The higher the value, the more efficacious the teacher feels about that item. Table 21 depicts the results of the t tests and the means for each item.

Table 21

Statistics for Racial-Ethnic Background: Items 1-24

Questionnaire Item		*SS*	*df*	*MS*	*F*	*sig.*	η^2
1 difficult students	racial-ethnic	9.542	3	3.181	1.189	.317	.029
	error	323.658	121	2.675			
2 think critically	racial-ethnic	8.957	3	2.986	1.558	.203	.037
	error	231.843	121	1.916			
3 disruptive behavior	racial-ethnic	2.894	3	.965	.540	.656	.013
	error	216.258	121	1.787			
4 motivate low interest	racial-ethnic	5.023	3	1.674	.666	.575	.016
	error	304.425	121	2.516			
5 expectations of behavior	racial-ethnic	5.068	3	1.689	1.689	.173	.040
	error	121.035	121	1.000			
6 do well in school	racial-ethnic	1.693	3	.564	.288	.834	.007
	error	237.082	121	1.959			
7 respond to questions	racial-ethnic	1.647	3	.549	.529	.663	.013
	error	125.606	121	1.038			
8 establish routines	racial-ethnic	2.705	3	.902	.673	.570	.016
	error	162.095	121	1.340			
9 value learning	racial-ethnic	5.606	3	1.869	.792	.500	.019
	error	285.334	121	2.358			
10 gauge comprehension	racial-ethnic	.370	3	.123	.097	.962	.002
	error	153.824	121	1.271			
11 craft questions	racial-ethnic	3.664	3	1.221	.921	.433	.022
	error	160.444	121	1.326			
12 foster creativity	racial-ethnic	1.238	3	.413	.177	.912	.004
	error	281.561	121	2.327			
13 follow rules	racial-ethnic	5.297	3	1.766	1.085	.358	.026
	error	196.895	121	1.627			
14 improve understanding	racial-ethnic	6.545	3	2.182	1.261	.291	.030
	error	209.425	121	1.731			
15 calm noisy students	racial-ethnic	4.911	3	1.637	.731	.536	.018
	error	271.057	121	2.240			
16 establish management	racial-ethnic	.537	3	.179	.124	.946	.003
	error	174.631	121	1.443			
17 adjust level	racial-ethnic	7.859	3	2.620	1.092	.355	.026
	error	290.158	121	2.398			

Questionnaire Item		*SS*	*df*	*MS*	*F*	*sig.*	η^2
18 variety of assessments	racial-ethnic	8.849	3	2.950	1.135	.338	.027
	error	314.486	121	2.599			
19 ruin lesson	racial-ethnic	4.015	3	1.338	.498	.685	.012
	error	325.374	121	2.689			
20 alternative explanations	racial-ethnic	1.733	3	.578	.547	.651	.013
	error	127.855	121	1.057			
21 defiant students	racial-ethnic	4.552	3	1.517	.646	.587	.016
	error	283.997	121	2.347			
22 assist families	racial-ethnic	24.428	3	8.143	2.733	* .047	.063
	error	360.509	121	2.979			
23 implement strategies	racial-ethnic	3.731	3	1.244	.514	.674	.013
	error	292.938	121	2.421			
24 appropriate challenges	racial-ethnic	2.150	3	.717	.355	.785	.009
	error	244.044	121	2.017			

* $p < .05$

The test for item 1 “How much can you do to get through to the most difficult students?” was not statistically significant, $F = 1.189$, $df = 3, 121$, $p = .317$. Levene’s test ($F = 1.537$, $df = 3, 121$, $p = .208$) shows there is homogeneity of groups. “Other” teachers ($n = 5$, $M = 7.40$, $SD = 2.191$) expressed higher self-efficacy beliefs than Black teachers ($n = 3$, $M = 6.33$, $SD = 2.309$), the Hispanic teachers ($n = 5$, $M = 6.20$, $SD = 2.309$), or White teachers ($n = 112$, $M = 6.01$, $SD = 1.568$). The η^2 (.029) reveals that nearly 3% of the variance in self-efficacy beliefs can be accounted for by racial-ethnic background. This would indicate a small effect size.

The test for item 2 “How much can you do to help your students think critically?” was not statistically significant, $F = 1.558$, $df = 3, 121$, $p = .203$. Levene’s test ($F = .151$, $df = 3, 121$, $p = .929$) shows there is homogeneity of groups. White teachers ($n = 112$, $M = 6.67$, $SD = 1.385$) expressed higher self-efficacy beliefs than Hispanic teachers ($n = 5$, $M = 7.60$, $SD = 1.342$),

"other" teachers (n = 5, M = 7.40, SD = 1.517), or black teachers (n = 3, M = 6.67, SD = 1.385). The η^2 (.037) reveals that nearly 4% of the variance in self-efficacy beliefs can be accounted for by racial-ethnic background. This would indicate a fairly small effect size.

The test for item 3 "How much can you do to control disruptive behavior in the classroom?" was not statistically significant, F = .540, df = 3, 121, p = .656. Levene's test (F = 1.605, df = 3, 121, p = .192) shows there is homogeneity of groups. "Other" teachers (n = 5, M = 8.20, SD = .837) expressed higher self-efficacy beliefs than Black teachers (n = 3, M = 7.67, SD = 2.309), the White teachers (n = 112, M = 7.51, SD = 1.322), or Hispanic teachers (n = 5, M = 7.20, SD = 1.483). The η^2 (.013) reveals that approximately 1% of the variance in self-efficacy beliefs can be accounted for by racial-ethnic background. This would indicate a small effect size.

The test for item 4 "How much can you do to motivate students who show low interest in school work?" was not statistically significant, F = .666, df = 3, 121, p = .575. Levene's test (F = .616, df = 3, 121, p = .606) shows there is homogeneity of groups. "Other" teachers (n = 5, M = 6.40, SD = 1.342) expressed higher self-efficacy beliefs than Black teachers (n = 3, M = 6.33, SD = 2.309), the Hispanic teachers (n = 5, M = 6.00, SD = 2.236), or White teachers (n = 112, M = 5.60, SD = 1.550). The η^2 (.016) reveals that nearly 2% of the variance in self-efficacy beliefs can be accounted for by racial-ethnic background. This would indicate a small effect size.

The test for item 5 "To what extent can you make your expectations clear about student behavior?" was not statistically significant, F = 1.689, df = 3, 121, p = .173. Levene's test (F = 2.610, df = 3, 121, p = .055) shows there is homogeneity of groups. "Other" teachers (n = 5, M = 8.60, SD = .548) expressed higher self-efficacy beliefs than Hispanic teachers (n = 5, M = 8.20,

SD = 1.095), the White teachers (*n* = 112, *M* = 8.19, *SD* = .982), or Black teachers (*n* = 112, *M* = 7.00, *SD* = 2.000). The η^2 (.040) reveals that 4% of the variance in self-efficacy beliefs can be accounted for by racial-ethnic background. This would indicate a fairly small effect size.

The test for item 6 "How much can you do to get students to believe they can do well in school work?" was not statistically significant, *F* = .288, *df* = 3, 121, *p* = .834. Levene's test (*F* = 1.537, *df* = 3, 121, *p* = .913) shows there is homogeneity of groups. "Other" teachers (*n* = 5, *M* = 7.20, *SD* = 2.049) expressed higher self-efficacy beliefs than Black teachers (*n* = 3, *M* = 7.00, *SD* = 2.000), the White teachers (*n* = 112, *M* = 6.84, *SD* = 1.359), or Hispanic teachers (*n* = 5, *M* = 6.40, *SD* = 1.342). The η^2 (.007) reveals that less than 1% of the variance in self-efficacy beliefs can be accounted for by racial-ethnic background. This would indicate a very small effect size.

The test for item 7 "How well can you respond to difficult questions from your students?" was not statistically significant, *F* = .529, *df* = 3, 121, *p* = .663. Levene's test (*F* = .145, *df* = 3, 121, *p* = .933) shows there is homogeneity of groups. Black teachers (*n* = 3, *M* = 8.33, *SD* = 1.155) expressed higher self-efficacy beliefs than Hispanic teachers (*n* = 5, *M* = 7.80, *SD* = 1.095), the White teachers (*n* = 112, *M* = 7.75, *SD* = 1.000), or "other" teachers (*n* = 5, *M* = 7.40, *SD* = 1.342). The η^2 (.013) reveals that approximately 1% of the variance in self-efficacy beliefs can be accounted for by racial-ethnic background. This would indicate a small effect size.

The test for item 8 "How well can you establish routines to keep activities running smoothly?" was not statistically significant, *F* = .673, *df* = 3, 121, *p* = .570. Levene's test (*F* = 1.537, *df* = 3, 121, *p* = .913) shows there is homogeneity of groups. "Other" teachers (*n* = 5, *M* = 8.20, *SD* = 1.095) expressed higher self-efficacy beliefs than white teachers (*n* = 112, *M* = 8.07,

SD = 1.113), the Hispanic teachers (*n* = 5, *M* = 7.60, *SD* = 1.673), or Black teachers (*n* = 3, *M* = 7.33, *SD* = 2.082). The η^2 (.016) reveals that nearly 2% of the variance in self-efficacy beliefs can be accounted for by racial-ethnic background. This would indicate a small effect size.

The test for item 9 "How much can you do to help your students value learning?" was not statistically significant, *F* = .792, *df* = 3, 121, *p* = .500. Levene's test (*F* = .018, *df* = 3, 121, *p* = .997) shows there is homogeneity of groups. Black teachers (*n* = 3, *M* = 7.33, *SD* = 1.528) expressed higher self-efficacy beliefs than "other" teachers (*n* = 5, *M* = 7.00, *SD* = 1.581), the White teachers (*n* = 112, *M* = 6.33, *SD* = 1.527), or Hispanic teachers (*n* = 5, *M* = 6.00, *SD* = 1.723). The η^2 (.019) reveals that nearly 2% of the variance in self-efficacy beliefs can be accounted for by racial-ethnic background. This would indicate a small effect size.

The test for item 10 "How much can you gauge student comprehension of what you have taught?" was not statistically significant, *F* = .097, *df* = 3, 121, *p* = .962. Levene's test (*F* = .121, *df* = 3, 121, *p* = .948) shows there is homogeneity of groups. Black teachers (*n* = 3, *M* = 7.67, *SD* = 1.115) expressed higher self-efficacy beliefs than Hispanic teachers (*n* = 5, *M* = 7.60, *SD* = .894), the White teachers (*n* = 112, *M* = 7.41, *SD* = 1.134), or "other" teachers (*n* = 5, *M* = 7.40, *SD* = 1.140). The η^2 (.002) reveals that less than 1% of the variance in self-efficacy beliefs can be accounted for by racial-ethnic background. This would indicate a very small effect size.

The test for item 11 "To what extent can you craft good questions for your students?" was not statistically significant, *F* = .921, *df* = 3, 121, *p* = .433. Levene's test (*F* = .852, *df* = 3, 121, *p* = .468) shows there is homogeneity of groups. Black teachers (*n* = 3, *M* = 8.00, *SD* = 1.000) expressed higher self-efficacy beliefs than White teachers (*n* = 112, *M* = 7.58, *SD* = 1.164), the "other" teachers (*n* = 5, *M* = 7.40, *SD* = .894), or Hispanic teachers (*n* = 5, *M* = 6.80,

SD = 1.095). The η^2 (.022) reveals that approximately 2% of the variance in self-efficacy beliefs can be accounted for by racial-ethnic background. This would indicate a small effect size.

The test for item 12 "How much can you do to foster creativity?" was not statistically significant, *F* = .177, *df* = 3, 121, *p* = .912. Levene's test (*F* = .797, *df* = 3, 121, *p* = .498) shows there is homogeneity of groups. Hispanic teachers (*n* = 5, *M* = 7.00, *SD* = 1.414) expressed higher self-efficacy beliefs than "other" teachers (*n* = 5, *M* = 6.60, *SD* = 2.191), the white teachers (*n* = 112, *M* = 6.52, *SD* = 1.482), or Black teachers (*n* = 3, *M* = 6.33, *SD* = 2.309). The η^2 (.004) reveals that less than 1% of the variance in self-efficacy beliefs can be accounted for by racial-ethnic background. This would indicate a very small effect size.

The test for item 13 "How much can you do to get children to follow the classroom rules?" was not statistically significant, *F* = 1.085, *df* = 3, 121, *p* = .358. Levene's test (*F* = .346, *df* = 3, 121, *p* = .792) shows there is homogeneity of groups. Black teachers (*n* = 3, *M* = 8.33, *SD* = 1.155) expressed higher self-efficacy beliefs than "other" teachers (*n* = 5, *M* = 8.20, *SD* = 1.095), the White teachers (*n* = 112, *M* = 7.57, *SD* = 1.278), or Hispanic teachers (*n* = 5, *M* = 7.00, *SD* = 1.414). The η^2 (.026) reveals that nearly 3% of the variance in self-efficacy beliefs can be accounted for by racial-ethnic background. This would indicate a fairly small effect size.

The test for item 14 "How much can you do to improve the understanding of a student who is failing?" was not statistically significant, *F* = 1.261, *df* = 3, 121, *p* = .291. Levene's test (*F* = .599, *df* = 3, 121, *p* = .617) shows there is homogeneity of groups. "Other" teachers (*n* = 5, *M* = 7.20, *SD* = 1.789) expressed higher self-efficacy beliefs than Black teachers (*n* = 3, *M* = 7.00, *SD* = 2.000), the Hispanic teachers (*n* = 5, *M* = 6.80, *SD* = 1.483), or White teachers (*n* = 112, *M* = 6.27, *SD* = 1.273). The η^2 (.030) reveals that 3% of the variance in self-efficacy beliefs

can be accounted for by racial-ethnic background. This would indicate a fairly small effect size.

The test for item 15 "How much can you do to calm a student who is disruptive or noisy?" was not statistically significant, $F = .731$, $df = 3, 121$, $p = .536$. Levene's test ($F = .722$, $df = 3, 121$, $p = .540$) shows there is homogeneity of groups. Black teachers ($n = 3$, $M = 8.00$, $SD = 1.732$) expressed higher self-efficacy beliefs than "other" teachers ($n = 5$, $M = 7.60$, $SD = .894$), the Hispanic teachers ($n = 5$, $M = 7.00$, $SD = 1.414$), or White teachers ($n = 112$, $M = 6.96$, $SD = 1.512$). The η^2 (.018) reveals that nearly 2% of the variance in self-efficacy beliefs can be accounted for by racial-ethnic background. This would indicate a small effect size.

The test for item 16 "How well can you establish a classroom management system with each group of students?" was not statistically significant, $F = .124$, $df = 3, 121$, $p = .946$. Levene's test ($F = .610$, $df = 3, 121$, $p = .610$) shows there is homogeneity of groups. Both "other" teachers ($n = 5$, $M = 8.00$, $SD = 1.000$) and Hispanic teachers ($n = 5$, $M = 8.00$, $SD = 1.000$), expressed higher self-efficacy beliefs than White teachers ($n = 112$, $M = 7.77$, $SD = 1.215$) or black teachers ($n = 3$, $M = 7.67$, $SD = 1.155$). The η^2 (.003) reveals that less than 1% of the variance in self-efficacy beliefs can be accounted for by racial-ethnic background. This would indicate a very small effect size.

The test for item 17 "How much can you do to adjust your lesson to the proper level for individual students?" was not statistically significant, $F = 1.092$, $df = 3, 121$, $p = .355$. Levene's test ($F = .783$, $df = 3, 121$, $p = .505$) shows there is homogeneity of groups. Black teachers ($n = 3$, $M = 8.33$, $SD = 1.155$) expressed higher self-efficacy beliefs than White teachers ($n = 112$, $M = 6.91$, $SD = 1.504$), the "other" teachers ($n = 5$, $M = 6.60$, $SD = 2.302$), or Hispanic teachers ($n = 5$, $M = 6.40$, $SD = 1.949$),. The η^2 (.026) reveals that nearly 3% of the variance in self-

efficacy beliefs can be accounted for by racial-ethnic background. This would indicate a fairly small effect size.

The test for item 18 "How much can use a variety of assessment strategies?" was not statistically significant, $F = 1.135$, $df = 3, 121$, $p = .338$. Levene's test ($F = .575$, $df = 3, 121$, $p = .633$) shows there is homogeneity of groups. Hispanic teachers ($n = 5$, $M = 8.60$, $SD = .894$) expressed higher self-efficacy beliefs than Black teachers ($n = 3$, $M = 7.67$, $SD = 1.155$), the White teachers ($n = 112$, $M = 7.27$, $SD = 1.649$), or "other" teachers ($n = 5$, $M = 7.20$, $SD = 1.304$). The η^2 (.027) reveals that nearly 3% of the variance in self-efficacy beliefs can be accounted for by racial-ethnic background. This would indicate a fairly small effect size.

The test for item 19 "How well can you keep a few problem children from ruining an entire lesson?" was not statistically significant, $F = .498$, $df = 3, 121$, $p = .685$. Levene's test ($F = .092$, $df = 3, 121$, $p = .964$) shows there is homogeneity of groups. Black teachers ($n = 3$, $M = 8.00$, $SD = 1.732$) expressed higher self-efficacy beliefs than "other" teachers ($n = 5$, $M = 7.40$, $SD = 1.342$), the White teachers ($n = 112$, $M = 7.13$, $SD = 1.625$), or Hispanic teachers ($n = 5$, $M = 6.60$, $SD = 2.191$). The η^2 (.012) reveals that only 1% of the variance in self-efficacy beliefs can be accounted for by racial-ethnic background. This would indicate a very small effect size.

The test for item 20 "To what extent can you provide an alternative explanations or example when students are confused?" was not statistically significant, $F = .547$, $df = 3, 121$, $p = .6516$. Levene's test ($F = 1.039$, $df = 3, 121$, $p = .378$) shows there is homogeneity of groups. "Other" teachers ($n = 5$, $M = 8.20$, $SD = .837$) expressed higher self-efficacy beliefs than White teachers ($n = 112$, $M = 7.77$, $SD = 1.028$), the Black teachers ($n = 3$, $M = 7.57$, $SD = 1.504$), or Hispanic teachers ($n = 5$, $M = 7.40$, $SD = .894$). The η^2 (.013) reveals that approximately 1% of

the variance in self-efficacy beliefs can be accounted for by racial-ethnic background. This would indicate a very small effect size.

The test for item 21 "How well can you respond to defiant students?" was not statistically significant, $F = .646$, $df = 3, 121$, $p = .587$. Levene's test ($F = .806$, $df = 3, 121$, $p = .493$) shows there is homogeneity of groups. Black teachers ($n = 3$, $M = 8.00$, $SD = 1.732$) expressed higher self-efficacy beliefs than "other" teachers ($n = 5$, $M = 7.80$, $SD = .837$), the White teachers ($n = 112$, $M = 7.18$, $SD = 1.549$) or the Hispanic teachers ($n = 5$, $M = 6.80$, $SD = 1.483$). The η^2 (.016) reveals that nearly 2% of the variance in self-efficacy beliefs can be accounted for by racial-ethnic background. This would indicate a small effect size.

The test for item 22 "How much can you assist families in helping their children do well in school?" revealed a statistically significant difference, $F = 2.733$, $df = 3, 121$, $p = .047$. Levene's test ($F = 1.472$, $df = 3, 121$, $p = .226$) shows there is homogeneity of groups. Black teachers ($n = 3$, $M = 8.00$, $SD = 1.000$) expressed higher self-efficacy beliefs than White teachers ($n = 122$, $M = 5.62$, $SD = 1.740$), the "other" teachers ($n = 5$, $M = 5.60$, $SD = .894$), or Hispanic teachers ($n = 5$, $M = 4.40$, $SD = 2.191$). The η^2 (.063) reveals that more than 6% of the variance in self-efficacy beliefs can be accounted for by racial-ethnic background. This would indicate a moderate effect size.

The test for item 23 "How well can you implement alternative strategies in your classroom?" was not statistically significant, $F = .514$, $df = 3, 121$, $p = .674$. Levene's test ($F = .620$, $df = 3, 121$, $p = .603$) shows there is homogeneity of groups. Hispanic teachers ($n = 5$, $M = 7.80$, $SD = 1.095$) expressed higher self-efficacy beliefs than Black teachers ($n = 3$, $M = 7.67$, $SD = 2.309$), the "other" teachers ($n = 5$, $M = 7.40$, $SD = 1.140$), or White teachers ($n = 112$, $M =$

7.08, *SD* = 1.566). The η^2 (.013) reveals that approximately 1% of the variance in self-efficacy beliefs can be accounted for by racial-ethnic background. This would indicate a very small effect size.

The test for item 24 "How well can you provide appropriate challenges for the very capable students?" was not statistically significant, *F* = .355, *df* = 3, 121, *p* = .785. Levene's test (*F* = .090, *df* = 3, 121, *p* = .966) shows there is homogeneity of groups. Black teachers (*n* = 3, *M* = 8.00, *SD* = 1.723) expressed higher self-efficacy beliefs than White teachers (*n* = 112, *M* = 7.43, *SD* = 1.405), the Hispanic teachers (*n* = 5, *M* = 7.2, *SD* = 1.483), or "other" teachers (*n* = 5, *M* = 7.00, *SD* = 1.581). The η^2 (.009) reveals that nearly 1% of the variance in self-efficacy beliefs can be accounted for by racial-ethnic background. This would indicate a very small effect size.

Only one of the means indicated a statistically significant difference among teachers with various racial-ethnic backgrounds: "How much can you assist families in helping their children do well in school?" Overall, Black teachers and teachers with "other" racial-ethnic backgrounds reported higher self-efficacy beliefs more frequently than White teachers or Hispanic teachers. The results of the ANOVA tests provide evidence that supports the conclusion that there is little difference between the self-efficacy beliefs of teachers from various racial-ethnic backgrounds.

Items 25 - 30

Six items on the questionnaire were created specifically for the current research study to determine whether participants believed their efficacy was influenced by their teacher training program or their own classroom experience. These paired items ask teachers to determine how well prepared they believed they were to engage students, to use instructional strategies, and to

create a classroom management system based on either their teacher training program or their personal classroom experience. Participants indicated their level of self-efficacy using a 5-point Likert scale anchored at 1 – very little, 3 – somewhat, and 5 – very well.

Type of Teacher Training

Independent sample *t*-tests were conducted to determine if teachers reported higher levels of self-efficacy beliefs for the condition of teacher training program or for the condition of personal classroom experience. Using SPSS software, t tests were conducted on each of the six items using an alpha of .05. The null hypothesis for each of the items on the questionnaire was that there would be no difference in the means between teacher groups, thus, the sample means would be equal. The null hypothesis can be represented as: $H = \mu_{college} = \mu_{alternative}$.

The assumption of normality was tested. A review of the Shipiro-Wilk's test of normality indicated that all items were statistically significant at the .05 level. The skewness and kurtosis statistics for the majority of the three items addressing teacher training program were within the +/-1 range for both the teachers with college of education and the teachers with alternative certification training for the majority of items. However, the skewness or kurtosis statistics for the majority of the three items addressing personal classroom experience were outside the +/-2 range. Although independent *t*-tests are generally robust to violations of normality with large samples, the exceptionally large skewness and kurtosis statistics for responses from college of education teachers regarding personal classroom experience warranted further investigation. Table 22 illustrates these statistics.

Table 22

Skewness and Kurtosis

	College of Education		*Alternative Certification*	
	Skewness	*Kurtosis*	*Skewness*	*Kurtosis*
Teacher Training Program				
25 student engagement	-.288	-.820	.009	-1.141
27 instructional strategies	-.460	-.102	-.121	-.669
29 classroom management	-.062	-1.005	.214	-1.172
Personal Classroom Experience				
26 student engagement	-2.104	4.83	-1.444	1.028
28 instructional strategies	-1.977	3.928	-1.285	.756
30 classroom management	-2.761	8.106	-1.569	1.617

The distribution for Item 25 “How well did your teacher training program prepare you to effectively engage students?” approaches a normal distribution for the College of Education teachers and is a fairly flat distribution for the Alternative Education teachers. Figure 6 illustrates the frequencies for this item. In contrast, the distribution for Item 26 “How well has your personal classroom experience prepared you to effectively engage students?” exhibits a markedly skewed distribution toward the right tale. This indicated a majority of the respondents chose “a great deal” and very few respondents chose “”very little.” Figure 7 illustrates the frequencies for this item.

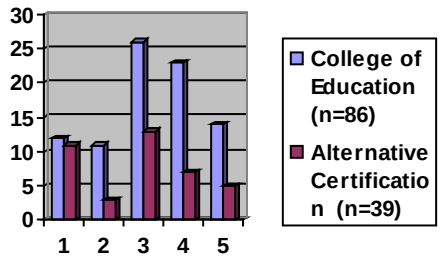

Figure 6

Frequencies for Type of Training: Item 25

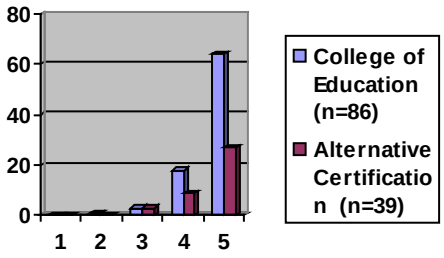

Figure 7

Frequencies for Type of Training: Item 26

The distribution for Item 27 “How well did your teacher training program prepare you to effectively implement instructional strategies?” reflects a bimodal distribution for the College of Education teachers and is a fairly normal distribution for the Alternative Education teachers. Figure 8 illustrates the frequencies for this item. In contrast, the distribution for Item 28 “How well has your personal classroom experience prepared you to effectively implement instructional strategies?” exhibits a markedly skewed distribution toward the right tale. This indicated a majority of the respondents chose “a great deal” and very few chose “”very little.” Figure 9

illustrates the frequencies for this item.

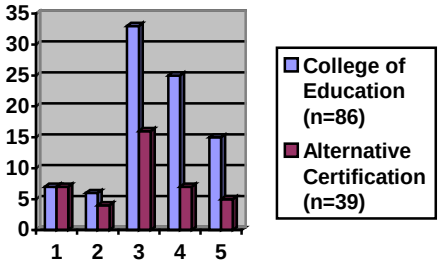

Figure 8

Frequencies for Type of Training: Item 27

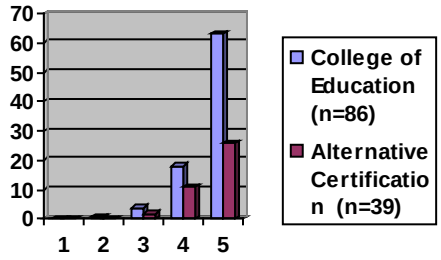

Figure 9

Frequencies for Type of Training: Item 28

The distribution for Item 29 “How well did your teacher training program prepare you to effectively manage your classroom and your students?” reflects a bimodal distribution for the College of Education teachers and is a bimodal distribution for the Alternative Education teachers. Figure 10 illustrates the frequencies for this item. In contrast, the distribution for Item 30 “How well has your personal classroom experience prepared you to effectively manage your classroom and your students?” exhibits a markedly skewed distribution toward the right tale.

This indicated a majority of the respondents chose “a great deal” and very few chose “”very little.” Figure 11 illustrates the frequencies for this item.

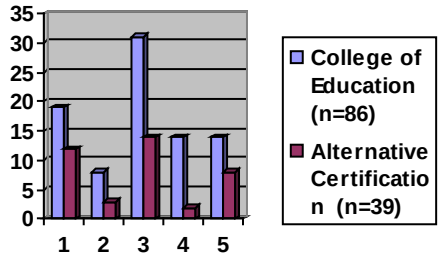

Figure 10

Frequencies for Type of Training: Item 29

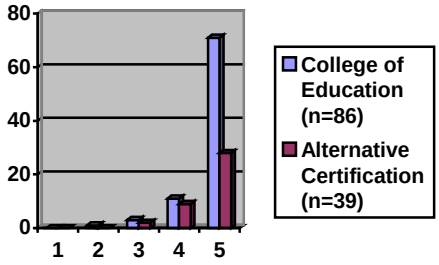

Figure 11

Frequencies for Type of Training: Item 30

For each pair of items from the questionnaire, the responses for the “personal classroom experience” condition are systematically different from the responses for the “teacher training program” condition.

The means for the 6 paired items for teacher training program and personal classroom

experience are based on a 5-point Likert scale. The higher the value, the more efficacious the teacher feels about that item. Table 23 depicts the results of the t tests and the means for each item.

Table 23

Statistics for Teacher Training: Items 25-30

				College of Education		*Alternative Certification*	
Questionnaire Item	*t*	*df*	*p*	*M*	*SD*	*M*	*SD*
Training							
25 student engagement	1.337	123	.184	3.22	1.296	2.87	1.472
27 instructional strategies	1.965	123	.052	3.41	1.109	2.97	1.246
29 classroom management	.688	123	.493	2.95	1.345	2.77	1.477
Experience							
26 student engagement	.600	123	.550	4.69	.599	4.62	.633
28 instructional strategies	.400	123	.690	4.66	.625	4.62	.590
30 classroom management	.915	123	.362	4.77	.567	4.67	.577

The test for item 25 "How well did your teacher training program prepare you to effectively engage students?" was not statistically significant, t (123) = 1.337, p = .184. Levene's test for equality of variances was met (F = .755, p = .386). Teachers with college of education training (n = 86, M = 3.22, SD = 1.296) expressed higher self-efficacy beliefs than teachers with alternative certification training (n = 39, M = 2.87, SD = 1.472). The effect size was calculated by η^2 and found to be .125, which indicates a fairly large effect size that accounts for approximately 13% of the variance in self-efficacy beliefs can be attributed to type of training.

The test for item 26 "How well has your personal classroom experience prepared you to effectively engage students?" was not statistically significant, t (123) = .600, p = .550. Levene's

test for equality of variances was met (F = .883, p = .349). Teachers with college of education training (n = 86, M = 4.69, SD = .599) expressed higher self-efficacy beliefs than teachers with alternative certification training (n = 39, M = 4.62, SD = .633). The effect size was calculated by η^2 and found to be .057, which indicates a moderate effect size that accounts for approximately 6% of the variance in self-efficacy beliefs can be attributed to type of training.

The test for item 27 "How well did your teacher training program prepare you to effectively implement instructional strategies?" was not statistically significant, t (123) = 1.965, p = .052. Levene's test for equality of variances was met (F = .008, p = .928). Teachers with college of education training (n = 86, M = 3.41, SD = 1.109) expressed higher self-efficacy beliefs than teachers with alternative certification training (n = 39, M = 2.97, SD = 1.246). The effect size was calculated by η^2 and found to be .183, which indicates a very large effect size that accounts for approximately 18% of the variance in self-efficacy beliefs can be attributed to type of training.

The test for item 28 "How well has your personal classroom experience prepared you to effectively implement instructional strategies?" was not statistically significant, t (123) = .400, p = .690. Levene's test for equality of variances was met (F = .076, p = .783). Teachers with college of education training (n = 86, M = 4.66, SD = .625) expressed higher self-efficacy beliefs than teachers with alternative certification training (n = 39, M = 4.62, SD = .590). The effect size was calculated by η^2 and found to be .033, which indicates a small effect size that accounts for approximately 3% of the variance in self-efficacy beliefs can be attributed to type of training.

The test for item 29 "How well did your teacher training program prepare you to effectively manage your classroom and your students?" was not statistically significant, t (123) =

.688, p = .493. Levene's test for equality of variances was met (F = 1.055, p = .306). Teachers with college of education training (n = 86, M = 2.95, SD = 1.345) expressed higher self-efficacy beliefs than teachers with alternative certification training (n = 39, M = 2.77, SD = 1.477). The effect size was calculated by η^2 and found to be .064, which indicates a moderate effect size that accounts for approximately 6% of the variance in self-efficacy beliefs can be attributed to type of training.

The test for item 30 "How well has your personal classroom experience prepared you to effectively manage your classroom and your students?" was not statistically significant, t (123) = .915, p = .362. Levene's test for equality of variances was met (F = 1.6075, p = .207). Teachers with college of education training (n = 86, M = 4.77, SD = .567) expressed higher self-efficacy beliefs than teachers with alternative certification training (n = 39, M = 4.67, SD = .577). The effect size was calculated by η^2 and found to be .087, which indicates a fairly large effect size that accounts for approximately 9% of the variance in self-efficacy beliefs can be attributed to type of training.

None of the means indicated a statistically significant difference between teachers with college of education training and teachers with alternative certification training. For each paired set of questions, both college of education teachers and alternative certification teachers reported higher levels of self-efficacy for the condition of personal classroom experience rather than for the condition of teacher training program. The results of the independent t tests provide evidence that supports the conclusion that there is little difference in self-efficacy beliefs between teachers with college of education training and teachers with alternative certification training.

Years of Experience

An analysis of variance (ANOVA) test was conducted to determine if expert teachers with ten or more years of teaching experience report higher levels of self-efficacy beliefs than experienced teachers with four to nine years of teaching experience or novice teachers with three or less years of teaching experience. Using SPSS software, each of the twenty-four items based on the Teachers' Sense of Efficacy Scale and each the six items based on training compare to classroom experience were tested. All ANOVA tests were conducted using an alpha of .05. The null hypothesis for each of the items on the questionnaire was that there would be no difference in the means among the teacher groups, thus, the sample means would be equal. The null hypothesis can be represented as: $H = \mu_{novice} = \mu_{experienced} = \mu_{expert}$.

The means for the 6 paired items for teacher training program and personal classroom experience are based on a 5-point Likert scale. The higher the value, the more efficacious the teacher feels about that item. Table 24 depicts the results of the ANOVA and the means for each item.

Table 24

Statistics for Years of Experience: Items 25-30

Questionnaire Item		*SS*	*df*	*MS*	*F*	*sig.*	η^2
Training							
25 student engagement	years	4.446	2	2.223	1.211	.301	.019
	error	223.986	122	1.836			
27 instructional strategies	years	.095	2	.048	.034	.966	.001
	error	168.518	122	1.381			
29 classroom management	years	6.098	2	3.049	1.607	.205	.026
	error	231.550	122	1.898			
Experience							
26 student engagement	years	1.481	2	2.035	.135	.032	
	error	44.407	122				
28 instructional strategies	years	2.105	2	1.053	2.892	.059	.045
	error	44.407	122	.364			
30 classroom management	years	2.710	2	1.355	4.400	* .014	.067
	error	37.578	122	.308			

* $p < .05$

The test for item 25 “How well did your teacher training program prepare you to effectively engage students?” was not statistically significant, $F = 1.211$, $df = 2, 122$, $p = .301$. Levene’s test ($F = .225$, $df = 2, 122$, $p = .799$) shows there is homogeneity of groups. Experienced teachers ($n = 35$, $M = 3.40$, $SD = 1.397$) expressed higher self-efficacy beliefs than novice teachers ($n = 11$, $M = 3.18$, $SD = 1.401$) or expert teachers ($n = 79$, $M = 2.97$, $SD = 1.330$). The η^2 (.019) reveals that approximately 2% of the variance in self-efficacy beliefs can be accounted for by years of teaching experience. This would indicate a very small effect size.

The test for item 26 “How well has your personal classroom experience prepared you to effectively engage students?” was not statistically significant, $F = 2.035$, $df = 2, 122$, $p = .135$. Levene’s test ($F = 5.767$, $df = 2, 122$, $p = .004$) is statistically significant. However, test results

are robust when the sample exceeds 50 participants. Expert teachers (n = 79, M = 4.75, SD =.581) expressed higher self-efficacy beliefs than novice teachers (n = 11, M = 4.55, SD = .522) or experienced teachers (n = 35, M = 4.51, SD = .781). The η^2 (.032) reveals that approximately 3% of the variance in self-efficacy beliefs can be accounted for by years of teaching experience. This would indicate a small effect size.

The test for item 27 "How well did your teacher training program prepare you to effectively implement instructional strategies?" was not statistically significant, F = .034, df = 2, 122, p = .966. Levene's test (F = 1.231, df = 2, 122, p = .296) shows there is homogeneity of groups. Novice teachers (n = 11, M = 3.36, SD = 1.502) expressed higher self-efficacy beliefs than expert teachers (n = 79, M = 3.27, SD = 1.151) or experienced teachers (n = 35, M = 3.26, SD = 1.120). The η^2 (.001) reveals that less than 1% of the variance in self-efficacy beliefs can be accounted for by years of teaching experience. This would indicate a very small effect size.

The test for item 28 "How well has your personal classroom experience prepared you to effectively implement instructional strategies?" was not statistically significant, F = 2.892, df = 2, 122, p = .059. Levene's test (F = 5.564, df = 2, 122, p = .005) is statistically significant. However, test results are robust when the sample exceeds 50 participants. Expert teachers (n = 79, M = 4.75, SD = .518) expressed higher self-efficacy beliefs than experienced teachers (n = 35, M = 4.49, SD = .742) or novice teachers (n = 11, M = 4.45, SD = .688). The η^2 (.045) reveals that nearly 5% of the variance in self-efficacy beliefs can be accounted for by years of teaching experience. This would indicate a fairly small effect size.

The test for item 29 "How well did your teacher training program prepare you to effectively manage your classroom and your students?" was not statistically significant, F =

1.607, *df* = 2, 122, *p* = .205. Levene's test (*F* = .096, *df* = 2, 122, *p* = .908) shows there is homogeneity of groups. Novice teachers (*n* = 11, *M* = 3.45, *SD* = 1.293) expressed higher self-efficacy beliefs than experienced teachers (*n* = 35, *M* = 3.06, *SD* = 1.434) or expert teachers (*n* = 79, *M* = 2.75, *SD* = 1.363). The η^2 (.026) reveals that nearly 3% of the variance in self-efficacy beliefs can be accounted for by years of teaching experience. This would indicate a small effect size.

The test for item 30 "How well has your personal classroom experience prepared you to effectively manage your classroom and your students?" was not statistically significant, *F* = 4.400, *df* = 2, 122, *p* = .014. Levene's test (F = 15.291, df = 2, 122, p = .000) is statistically significant. However, test results are robust when the sample exceeds 50 participants. Expert teachers (*n* = 79, *M* = 4.84, *SD* = .406) expressed higher self-efficacy beliefs than experienced teachers (*n* = 35, *M* = 4.63, *SD* = .646) or novice teachers (*n* = 11, *M* = 4.36, *SD* = 1.027). The η^2 (.067) reveals that nearly 7% of the variance in self-efficacy beliefs can be accounted for by years of teaching experience. This would indicate a fairly moderate effect size.

None of the means indicated a statistically significant difference between novice teachers, experienced teachers, and expert teachers. Overall, the novice teachers reported higher self-efficacy beliefs for two items, the experienced teachers reported higher self-efficacy beliefs for one item, and the expert teachers reported higher self-efficacy beliefs for three items. The results of the ANOVA tests provide evidence that supports the conclusion that there are few differences among the self-efficacy beliefs of teachers with varying levels of classroom experience.

Six items on the questionnaire were created specifically for the current research study to determine whether participants believed their efficacy was influenced by their teacher training

program or their own classroom experience. These paired items asked teachers to determine how well prepared they felt they were to engage students, to use instructional strategies, and to create a classroom management system based on either their teacher training program or their personal classroom experience. Using the *t*-test analyses for college of education training and alternative certification training and the ANOVA tests for novice, experienced, and expert years of experience, Table 25 illustrates the means for type of teacher training and for number of years of experience for each questionnaire item. The responses are based on a 9-point Likert scale.

Table 25

Means for Self-Efficacy: Items 25-30

		Means and (Standard Deviations)					
	Questionnaire Item	*All Participants*	*College of Education*	*Alternative Certification*	*Novice*	*Experienced*	*Expert*
25	How well did your teacher training prepare you to effectively engage students?	3.11 (1.357)	3.22 (1.296)	2.87 (1.472)	3.18 (1.401)	3.40 (1.397)	2.97 (1.330)
26	How well has your personal classroom experience prepared you to effectively engage students?	4.66 (.608)	4.69 (.599)	4.62 (.633)	4.55 (.522)	4.51 (.781)	4.75 (.518)
27	How well did your teacher training prepare you to effectively implement instructional strategies?	3.28 (1.166)	3.41 (1.109)	2.97 (1.246)	3.36 (1.502)	3.26 (1.120)	3.27 (1.151)
28	How well has your personal classroom experience prepared you to effectively implement instructional strategies?	4.65 (.612)	4.66 (.625)	4.62 (.590)	4.45 (.688)	4.49 (.742)	4.75 (.518)
29	How well did your teacher training prepare you to effectively manage your classroom and your students?	2.90 (1.384)	2.95 (1.345)	2.77 (1.477)	3.45 (1.293)	3.06 (1.434)	2.75 (1.363)
30	How well has your personal classroom experience prepared you to effectively manage your classroom and your students?	4.74 (.570)	4.77 (.567)	4.67 (.577)	4.36 (1.027)	4.63 (.646)	4.84 (.406)

Gender

Independent sample *t* tests were conducted to determine if teachers reported higher levels of self-efficacy beliefs for the condition of teacher training program or for the condition of personal classroom experience. Using SPSS software, t tests were conducted on each of the six items using an alpha of .05. The null hypothesis for each of the items on the questionnaire was that there would be no difference in the means between teacher groups, thus, the sample means would be equal. The null hypothesis can be represented as: $H = \mu_{male} = \mu_{female}$.

The means for the 6 paired items for teacher training program and personal classroom experience are based on a 5-point Likert scale. The higher the value, the more efficacious the teacher feels about that item. Table 26 depicts the results of the t tests and the means for each item.

Table 26

Statistics for Gender: Items 25-30

					Male		*Female*	
	Questionnaire Item	*t*	*df*	*p*	*M*	*SD*	*M*	*SD*
	Training							
25	student engagement	-.295	123	.769	3.06	1.264	3.13	1.400
27	instructional strategies	.522	123	.602	3.36	1.073	3.24	1.206
29	classroom management	.533	123	.595	3.00	1.373	2.85	1.394
	Experience							
26	student engagement	-.942	123	.348	4.58	.649	4.70	.592
28	instructional strategies	-1.074	123	.285	4.56	.558	4.69	.632
30	classroom management	-1.925	123	.098	4.58	.692	4.80	.504

The test for item 25 “How well did your teacher training program prepare you to effectively engage students?” was not statistically significant, t (123) = -.295, p = .769. Levene’s test for equality of variances was met (F = .555, p = .458). Female teachers (n = 89, M = 3.13, SD = 1.400) expressed higher self-efficacy beliefs than male teachers (n = 36, M = 3.06, SD = 1.264). The effect size was calculated by η^2 and found to be -.026, which indicates a fairly small effect size that accounts for approximately 3% of the variance in self-efficacy beliefs can be attributed to gender.

The test for item 26 “How well has your personal classroom experience prepared you to effectively engage students?” was not statistically significant, t (123) = -.942, p = .348. Levene’s test for equality of variances was met (F = 1.938, p = .166). Female teachers (n = 89, M = 4.70, SD = .592) expressed higher self-efficacy beliefs than male teachers (n = 36, M = 4.58, SD = .649). The effect size was calculated by η^2 and found to be -.096, which indicates a fairly large effect size that accounts for approximately 10% of the variance in self-efficacy beliefs can be attributed to gender.

The test for item 27 “How well did your teacher training program prepare you to effectively implement instructional strategies?” was not statistically significant, t (123) = .522, p = .602. Levene’s test for equality of variances was met (F = .331, p = .566). Male teachers (n = 36, M = 3.36, SD = 1.073) expressed higher self-efficacy beliefs than female teachers (n = 89, M = 3.24, SD = 1.206). The effect size was calculated by η^2 and found to be .052, which indicates a moderate effect size that accounts for approximately 5% of the variance in self-efficacy beliefs can be attributed to gender.

The test for item 28 “How well has your personal classroom experience prepared you to

effectively implement instructional strategies?" was not statistically significant, t (123) = -1.074, p = .285. Levene's test for equality of variances was met (F = .284, p = .595). Female teachers (n = 89, M = 4.69, SD = .632) expressed higher self-efficacy beliefs than male teachers (n = 36, M = 4.56, SD = .558). The effect size was calculated by η^2 and found to be -.108, which indicates a fairly large effect size that accounts for approximately 11% of the variance in self-efficacy beliefs can be attributed to gender.

The test for item 29 "How well did your teacher training program prepare you to effectively manage your classroom and your students?" was not statistically significant, t (123) = .533, p = .595. Levene's test for equality of variances was met (F = .1295, p = .720). Male teachers (n = 36, M = 3.00, SD = 1.373) expressed higher self-efficacy beliefs than female teachers (n = 89, M = 2.85, SD = 1.394). The effect size was calculated by η^2 and found to be .054, which indicates a moderate effect size that accounts for approximately 5% of the variance in self-efficacy beliefs can be attributed to gender.

The test for item 30 "How well has your personal classroom experience prepared you to effectively manage your classroom and your students?" was not statistically significant, t (123) = -1.925, p = .057. Levene's test for equality of variances cannot be assumed (F = 8.230, p = .005). Female teachers (n = 89, M = 4.80, SD = .504) expressed higher self-efficacy beliefs than male teachers (n = 36, M = 4.58, SD = .692). The effect size was calculated by η^2 and found to be -.179, which indicates a very large effect size that accounts for approximately 18% of the variance in self-efficacy beliefs can be attributed to gender.

None of the means indicated a statistically significant difference between male and female teachers. Overall, the females reported significantly higher self-efficacy beliefs more

frequently than the male teachers. The results of the independent *t* tests provide evidence that supports the conclusion that there is not much difference in self-efficacy beliefs between male and female teachers.

Racial-Ethnic Background

An analysis of variance (ANOVA) was conducted to determine if racial-ethnic background played a role in the self-efficacy beliefs of teachers. Using SPSS software, each of the twenty-four items based on the Teachers' Sense of Efficacy Scale and each the six items based on training compare to classroom experience were tested. All ANOVA tests were conducted using an alpha of .05. The null hypothesis for each of the items on the questionnaire was that there would be no difference in the means among the teacher groups, thus, the sample means would be equal. The null hypothesis can be represented as: $H = \mu_{white} = \mu_{black} = \mu_{hispanic} = \mu_{other}$.

The means for the 6 paired items for teacher training program and personal classroom experience are based on a 5-point Likert scale. The higher the value, the more efficacious the teacher feels about that item. Table 27 depicts the results of the t tests and the means for each item.

Table 27

Statistics for Racial-Ethnic Background: Items 25-30

Questionnaire Item		*SS*	*df*	*MS*	*F*	*sig.*	*η2*
Training							
25 student engagement	racial-ethnic	4.230	3	1.410	.823	.484	.020
	error	207.258	121	1.713			
27 instructional strategies	racial-ethnic	4.493	3	1.498	1.104	.350	.027
	error	164.120	121	1.356			
29 classroom management	racial-ethnic	11.505	3	3.835	2.052	.110	.048
	error	226.143	121	1.869			
Experience							
26 student engagement	racial-ethnic	.045	3	.015	.039	.990	.001
	error	45.843	121	.379			
28 instructional strategies	racial-ethnic	.798	3	.266	.704	.552	.017
	error	45.714	121	.378			
30 classroom management	racial-ethnic	1.124	3	.375	1.157	.329	.028
	error	39.164	121	.324			

* $p < .05$

The test for item 25 “How well did your teacher training program prepare you to effectively engage students?” was not statistically significant, $F = .823$, $df = 3, 121$, $p = .484$. Levene’s test ($F = .032$, $df = 3, 121$, $p = .992$) shows there is homogeneity of groups. “Other” teachers ($n = 5$, $M = 3.80$, $SD = 1.304$) expressed higher self-efficacy beliefs than Black teachers ($n = 3$, $M = 3.67$, $SD = 1.155$), the Hispanic teachers ($n = 5$, $M = 3.20$, $SD = 1.483$), or White teachers ($n = 112$, $M = 3.01$, $SD = 1.305$). The η^2 (.02) reveals that 2% of the variance in self-efficacy beliefs can be accounted for by years of teaching experience. This would indicate a fairly small effect size.

The test for item 26 “How well has your personal classroom experience prepared you to effectively engage students?” was not statistically significant, $F = .039$, $df = 3, 121$, $p = .990$.

Levene's test (F = .017, df = 3, 121, p = .997) shows there is homogeneity of groups. Both the White teachers (n = 112, M = 4.67, SD = .621) and Black teachers (n = 3, M = 4.67, SD = .577) expressed higher self-efficacy beliefs than the Hispanic teachers (n = 5, M = 4.60, SD = .548) and "other" teachers (n = 5, M = 4.60, SD = .548). The η^2 (.001) reveals that less than 1% of the variance in self-efficacy beliefs can be accounted for by years of teaching experience. This would indicate a very small effect size.

The test for item 27 "How well did your teacher training program prepare you to effectively implement instructional strategies?" was not statistically significant, F = 1.104, df = 3, 121, p = .350. Levene's test (F = .189, df = 3, 121, p = .9043) shows there is homogeneity of groups. Both the "other" teachers (n = 5, M = 4.00, SD = 1.225) and the black teachers (n = 3, M = 4.00, SD = 1.000) expressed higher self-efficacy beliefs than the White teachers (n = 112, M = 3.23, SD = 1.152) or Hispanic teachers (n = 5, M = 3.20, SD = 1.483). The η^2 (.027) reveals that nearly 3% of the variance in self-efficacy beliefs can be accounted for by years of teaching experience. This would indicate a fairly small effect size.

The test for item 28 "How well has your personal classroom experience prepared you to effectively implement instructional strategies?" was not statistically significant, F = .704, df = 3, 121, p = .552. Levene's test (F = 3.270, df = 2, 122, p = .024) is statistically significant. However, test results are robust when the sample exceeds 50 participants. Black teachers (n = 3, M = 5.00, SD = .000) expressed higher self-efficacy beliefs than "other" teachers (n = 5, M = 4.80, SD = .447), the White teachers (n = 112, M = 4.64, SD = .613), or Hispanic teachers (n = 5, M = 4.40, SD = .894). The η^2 (.017) reveals that nearly 2% of the variance in self-efficacy beliefs can be accounted for by years of teaching experience. This would indicate a small effect size.

The test for item 29 “How well did your teacher training program prepare you to effectively manage your classroom and your students?” was not statistically significant, F = 2.052, df = 3, 121, p = .110. Levene’s test (F = .432, df = 3, 121, p = .731) shows there is homogeneity of groups. “Other” teachers (*n* = 5, *M* = 4.00, *SD* = 1.000) expressed higher self-efficacy beliefs than Black teachers (*n* = 3, *M* = 3.67, *SD* = 1.155), the Hispanic teachers (*n* = 5, *M* = 3.60, *SD* = 1.673), or White teachers (*n* = 112, *M* = 2.79, *SD* = 1.370). The η^2 (.048) reveals that nearly 5% of the variance in self-efficacy beliefs can be accounted for by years of teaching experience. This would indicate a fairly small effect size.

The test for item 30 “How well has your personal classroom experience prepared you to effectively manage your classroom and your students?” was not statistically significant, *F* = 1.157, *df* = 3, 121, *p* = .329. Levene’s test (F = 4.428, df = 2, 122, p = .005) is statistically significant. However, test results are robust when the sample exceeds 50 participants. Both “other” teachers (*n* = 5, *M* = 5.00, *SD* = .000) and Black teachers (*n* = 3, *M* = 5.00, *SD* = .000) expressed higher self-efficacy beliefs than the White teachers (*n* = 122, *M* = 4.73, *SD* = .569) or Hispanic teachers (*n* = 5, *M* = 4.40, *SD* = .894). The η^2 (.028) reveals that nearly 3% of the variance in self-efficacy beliefs can be accounted for by years of teaching experience. This would indicate a fairly small effect size.

None of the means indicated a statistically significant difference among teachers with various racial-ethnic backgrounds. The results of the ANOVA tests provide evidence that supports the conclusion that there is little difference between the self-efficacy beliefs of teachers from various racial-ethnic backgrounds.

Teachers' Comments

Six items on the questionnaire were created specifically for the current research study to determine whether participants believed their efficacy was influenced by their teacher training or their own classroom experience. Using the three factors from the Sense of Efficacy Scale, pairs of questions were written to focus on effectively engaging students, effectively implementing instructional strategies, and effectively managing the classroom and students. In addition to the Likert-scale response, participants were invited to write an anonymous comment for each item. There were 38 comments for Item 25, 21 comments for Item 26, 21 comments for Item 27, 10 comments for Item 28, 19 comments for Item 29, and 11 comments for Item 30. A total of 120 comments were submitted by the participants. See Appendix G for a transcript of all comments.

A thematic analysis based on the "relational theme" pattern developed by Owen (1984) of the 120 comments produced several important patterns. Owen emphasizes three criteria for identifying themes in qualitative research: recurrence, repetition, and forcefulness. The majority of the comments were positive in nature. They complimented a professor, a training session, a peer or mentor. They also positively reflected on growth and change. These comments aligned into four recurring categories: continued learning, hands-on experience, internships, and peer mentoring. The most frequently repetitive words included "learned" and "learning" followed by "classroom" and "own class" and then "training." Additionally, there were numerous negative comments. These criticized a college course or a training session, often explaining how the needs of the teacher were not met. The most forceful comments emerged from rewarding internships and irrelevant classes.

Items 25 and 26 ask participants to determine their effectiveness in engaging students in

the classroom. Representative examples of the teachers' comments for Item 25 "How well did your teacher training prepare you to effectively engage students?" and Item 26 "How well has your personal classroom experience prepared you to effectively engage students?" follow. All comments are copied exactly and are unedited.

- I feel like my teacher training gave me the concrete preparation for my job but it did not, nor could it have, given me the intangibles effectively engage students. Therefore, I work everyday to get better at that task. (novice teacher with college of education training)
- Of course you continuously learn new strategies, but I was well prepared with tools to engage students. (novice teacher with college of education training)
- I have learned far more from trial and error about how to get my students interested in learning than most things that I learned through my training. (novice teacher with alternative certification training)
- Learning everyday how to handle different situations. (experienced teacher with college of education training)
- My personal experience in a classroom has opened my eyes to the many differences in generations of students. As a student I was very in tune to what was expected of me and made that my priority. As time goes by I have realized that these students have a different set of priorities, and thus a different mindset on the value of education. (experienced teacher with college of education training)
- Being a 20 year teacher is more important than what I learned in college! (expert teacher with college of education training)
- Almost everything I have learned has been through being in the classroom. (expert teacher with college of education training)
- I am a reflective teacher and almost every day is a learning experience. That doesn't mean it isn't very difficult sometimes. The less motivated a student is by personal, family and peer expectations, the harder it is for the teacher to close that gap. (expert teacher with college of education training)
- You must be able to self evaluate strengths and weaknesses. (expert teacher with college of education training)

- Each year I grow tremendously as my students teach me how to improve my skills. (expert teacher with college of education training)
- It gave me the strategies to use, but in training is nothing like having your own classroom of students. Having your own class is so much more difficult. (experienced teacher with college of education training)
- Teaching often becomes hands-on training. The most difficult year is the first year. (experienced teacher with college of education training)
- I need classroom experience to understand the wide variations within the student population, how each person learns, etc. (experienced teacher with alternative certification training)
- I first became a vocational teacher which emphasized hands on learning – learning to do; doing to learn. I keep that approach in my now academic courses. (expert teacher with college of education training)
- Nothing beats experience, and trial and error. More experience gives you a chance to try out lessons, keep what works, and discard or "revamp" what doesn't work. (expert teacher with alternative certification training)
- I went to UCF and received great current research-based practices. My internships that UCF coordinated prepared me very well for my first year of teaching. (novice teacher with college of education training)
- My training allowed me to cultivate ideas to implement in my classroom. Being with other teachers-in-training provided a brainstorm of ideas that I probably would not have been able to come up with on my own. It provided, in a way, a network for implementation. (experienced teacher with college of education training)
- I have a non-education major, so my education classes were the minimum required. My preparation came from mentors who were wonderful! (expert teacher with alternative certification training)

Items 27 and 28 ask participants to determine their effectiveness in implementing instructional strategies. Representative examples of the teachers' comments for Item 27 "How well did your teacher training prepare you to effectively implement instructional strategies?" and

Item 28 “How well has your personal classroom experience prepared you to effectively implement instructional strategies?” follow. All comments are copied exactly and are unedited.

- In training I was able to test out ideas and resources with supervision of someone who already knew how to handle situations. That kind of fostering allowed me to feel more comfortable when “flying solo.” (experienced teacher with college of education training)
- Professional Development helped more than teacher training preparation in college. (expert teacher with college of education training)
- We receive recertification training every five years which cover instructional strategies, thinking maps… (expert teacher with alternative certification training)
- In my ExEd degree we spend much time creating and investigating numerous strategies to teach to all levels from participatory to gifted. (novice teacher with college of education training)
- The strategies learned were great but in the classroom adjustments have to be made. (experienced teacher with college of education training)
- I now have a better understanding of how receptive my age group of students will be and how to get them to “buy into the strategy.” (expert teacher with college of education training)
- By allowing me to go beyond the traditional materials and make connections for students to present time and place in order to make my material relevant. (expert teacher with college of education training)
- Had good modeling of this in college from the teachers I observed and worked with. (expert teacher with college of education training)

Items 29 and 30 ask participants to determine their effectiveness in managing their students and their classroom. Representative examples of the teachers’ comments for Item 29 “How well did your teacher training prepare you to effectively manage your classroom and your students?” and Item 30 “How well has your personal classroom experience prepared you to effectively manage your classroom and your students?” follow. All comments are copied exactly

and are unedited.

- I learned more from reading books like Harry Wong's "The First Days of School" and Todd Whitaker's "What Great Teachers Do Differently" (novice teacher with alternative certification training)
- This was one of two useful classes. The instructor was a classroom teacher, so the class was practical, useful, and relevant. (experienced teacher with college of education training)
- All I heard were the horror stories and how tough-minded a teacher had to be. It is one thing to read about classroom management and another to actually implement it. Especially the teacher/administrator and teacher/parent interaction(s) and support or lack thereof. (experienced teacher with alternative certification training)
- I subbed while I was in college, so I managed a classroom long before I ever had to run it. I've always felt comfortable with classroom management. (experienced teacher with college of education training)
- It gave the basics but with out a great deal of practice in different settings made them awkward to implement. (expert teacher with college of education training)
- This is the weakest area of training for me. Nothing will prepare you for the classroom like being in a classroom. Mentoring in the school for beginning teachers is vital. (expert teacher with college of education training)
- You quickly learn from your mistakes and hope to survive. It also has helped me to watch other teachers I respect, listen and learn from them, and then incorporate those learnings into my own unique style. (expert teacher with college of education training)
- Raising my own children gave me more preparation than any classroom experience! (expert teacher with college of education training)
- I had a tough instructor in college whom held us very accountable for time management and class discipline. At the time did not care for what we had to do but when I started teaching and was organized and disciplined myself it was a huge carry over to the way my classes were managed. (expert teacher with college of education training)
- I learned zip about classroom management in college. I learned the most in this area by watching other

teachers I respect and modeling them. I also bought a book on class discipline which helped me a lot with mean or dumb parents! (expert teacher with college of education training)

- Interning helped prepare me for the classroom. (expert teacher with college of education training)
- When I student taught, most of the management was handled by the cooperating teacher at the beginning of the year. I think this is true in general and one of the reasons the first few years are so hard. (expert teacher with college of education training)

While many of the negative comments written by the participants are critical, their thoughts are important and insightful. All comments are copied exactly and are unedited.

- While my degree was not in education, I did take a number of courses related to the field. The examples that we used in class seemed to primarily focus on the "ideal" classroom not the "real world" classroom. (novice teacher with alternative certification training)
- The courses I took oftentimes were not specific enough to type types of kids I teach to be truly effective in helping me gain strategies for high school kids. (novice teacher with alternative certification training)
- The county new teacher training seemed geared to elementary teachers. (novice teacher with alternative certification training)
- In 5 years of college, I had 2 classes that provided actual useful tools, not just paper-pushing skills. Programs where pre-service teaches have little contact with practicing classroom teachers are a disservice all the way around. (experienced teacher with college of education training)
- Again, my teacher training program was a whole lot of theory and not much else. (experienced teacher with college of education training)
- Real world work and training is more effective than teaching programs in colleges. Understanding the content is most important, as is caring about what you're teaching. Too much emphasis is placed on "teaching strategies" and not enough is placed on real knowledge. Educational theory is just that – someone's idea of what works, not real research on what actually goes on in the classroom, and what students need to KNOW in order to be successful. (experienced teacher with alternative certification

training)

- What is taught in the colleges and the theories/practices are simply not realistic. In theory, they are fine, but not when you step into a classroom for the first time. (expert teacher with alternative certification training)
- I took my teaching classes as a post-bac, and they were all geared to elementary school. Since I teach at a high school, they didn't help much. (expert teacher with alternative certification training)
- The majority of my teacher training was based on the elementary school setting. (expert teacher with college of education training)
- College + the real thing are 2 different things. (expert teacher with college of education training)
- Fantasy in the college class vs. reality in the classroom. (expert teacher with alternative certification training)
- I don't think any training can prepare an individual for what they will experience in a classroom and those experiences vary from region to region (even neighborhood to neighborhood). (expert teacher with alternative certification training

Interaction Effects

A two-way factorial analysis of variance (ANOVA) was conducted to determine whether or not there was an interaction effect between type of teacher training and number of years of experience.

Using SPSS software, each of the twenty-four items based on the Teachers' Sense of Efficacy Scale and each the six items based on training compare to classroom experience were tested. All tests were conducted using an alpha of .05. There were three null hypotheses. First, there would be no difference in the means between the college of education trained teachers and the alternative certification trained teachers. Therefore, the sample means would be equal and the null hypothesis could be represented as: $H = \mu_{college} = \mu_{alternative}$. Second, there would be no

difference in the means among the novice teachers with three or less years of experience, the experienced teachers with four to nine years of experience, and the expert teachers with ten or more years of experience. Therefore, the sample means would be equal and the null hypothesis could be represented as: $H = \mu_{novice} = \mu_{experienced} = \mu_{expert}$. Finally, there would be no interaction effect between the means for the type of teacher training and the number of years of teaching experience. Thus, the sample means would be equal and the null hypothesis could be represented as: $H = \mu_{training} = \mu_{years}$. Table 28 shows the between-subject effects.

Table 28

Between-Subject Effects: Items 1-24

Questionnaire Item		*df*	*F*	*sig.*	η^2
1 difficult students	years	2	.216	.806	.004
	training	1	.014	.907	.000
	years X training	2	.188	.829	.003
2 think critically	years	2	1.156	.318	.019
	training	1	.533	.467	.004
	years X training	2	5.664	* .004	.087
3 disruptive behavior	years	2	.473	.625	.008
	training	1	.739	.392	.006
	years X training	2	1.047	.354	.017
4 motivate low interest	years	2	.778	.462	.013
	training	1	.205	.651	.002
	years X training	2	1.443	.240	.024
5 expectations of behavior	years	2	1.117	.331	.018
	training	1	.620	.432	.005
	years X training	2	.639	.529	.011
6 do well in school	years	2	.483	.618	.008
	training	1	7.849	* .006	.062
	years X training	2	4.998	* .008	.077
7 respond to questions	years	2	1.529	.221	.025
	training	1	.852	.358	.007
	years X training	2	1.463	.236	.024
8 establish routines	years	2	.068	.934	.001
	training	1	.404	.526	.003
	years X training	2	.090	.914	.002
9 value learning	years	2	1.472	.234	.024
	training	1	.966	.328	.008
	years X training	2	2.429	.092	.039
10 gauge comprehension	years	2	.162	.851	.003
	training	1	1.080	.301	.009
	years X training	2	.488	.615	.008
11 craft questions	years	2	2.323	.102	.038
	training	1	.207	.650	.002
	years X training	2	1.855	.161	.030

* $p < .05$

Questionnaire Item		*df*	*F*	*sig.*	η^2
12 foster creativity	years	2	1.595	.207	.026
	training	1	1.925	.168	.016
	years X training	2	2.348	.100	.038
13 follow rules	years	2	.236	.790	.004
	training	1	1.129	.290	.009
	years X training	2	1.169	.314	.019
14 improve understanding	years	2	.202	.817	.003
	training	1	3.687	.057	.030
	years X training	2	1.174	.313	.019
15 calm noisy students	years	2	.243	.785	.004
	training	1	1.622	.205	.013
	years X training	2	.702	.498	.012
16 establish management	years	2	1.052	.352	.017
	training	1	1.699	.195	.014
	years X training	2	.491	.613	.008
17 adjust level	years	2	.160	.852	.003
	training	1	.386	.536	.003
	years X training	2	.939	.394	.016
18 variety of assessments	years	2	.304	.738	.005
	training	1	.591	.443	.005
	years X training	2	.405	.668	.007
19 ruin lesson	years	2	.808	.448	.013
	training	1	.193	.661	.002
	years X training	2	.465	.629	.008
20 alternative explanations	years	2	.149	.861	.003
	training	1	.147	.702	.001
	years X training	2	.356	.701	.006
21 defiant students	years	2	.129	.879	.002
	training	1	.332	.565	.003
	years X training	2	.499	.608	.008
22 assist families	years	2	1.365	.259	.022
	training	1	.252	.617	.002
	years X training	2	.009	.991	.000
23 implement strategies	years	2	.355	.702	.006
	training	1	.181	.671	.002
	years X training	2	.473	.625	.008

* $p < .05$

Questionnaire Item		*df*	*F*	*sig.*	η^2
24 appropriate challenges	years	2	1.713	.185	.028
	training	1	1.235	.269	.010
	years X training	2	.634	.532	.011

* $p < .05$

The test for item 1 “How much can you do to get through to the most difficult students?” did not show a statistically significant effect ($F = .014$, $df = 1$, $p = .907$) between teachers with different types of teacher training programs. The effect size using η^2 for years of experience (.000) indicates none of the variance in self-efficacy beliefs can be explained. Levene’s test for equality of variances was met ($F = .175$, $df = 5$, $p = .971$).The college of education trained teachers ($n = 86$, $M = 6.09$, $SD = 1.699$) expressed higher self-efficacy beliefs than alternative certification trained teachers ($n = 39$, $M = 6.05$, $SD = 1.521$). Also, the test for item 1 did not show a statistically significant effect ($F = .216$, $df = 2$, $p = .896$) between teachers with varying years of teaching experience. The effect size using η^2 for years of experience (.012) indicates approximately 1% of the variance in self-efficacy beliefs can be explained. The novice teachers ($n = 11$, $M = 6.36$, $SD = 1.629$) expressed higher self-efficacy beliefs than expert teachers (n = 79, $M = 6.08$, $SD = 1.655$) or experienced teachers ($n = 35$, $M = 6.00$, $SD = 1.645$). Further, the test for item 1 did not show a statistically significant effect ($F = .216$, $df = 2$, $p = .896$) as an interaction effect between teachers with varying years of teaching experience and different teacher training programs. The effect size using η^2 for years of experience (.003) indicates less than 1% of the variance in self-efficacy beliefs can be explained. Finally, the r^2 (.007) for the Model of years of experience, type of training, and interaction of years by training indicates that

overall less than 1% of the variance in means of self-efficacy beliefs can be explained. This is a very small effect size.

The test for item 2 “How much can you do to help your students think critically?” did not show a statistically significant effect ($F = .533$, $df = 1$, $p = .467$) between teachers with different types of teacher training programs. Levene’s test (F = .175, df = 5, p = .971) is statistically significant. However, test results are robust when the sample exceeds 50 participants. The effect size using η^2 for years of experience (.004) indicates very little of the variance in self-efficacy beliefs can be explained. The alternative certification trained teachers ($n = 39$, $M = 6.79$, $SD = 1.151$) expressed higher self-efficacy beliefs than college of education trained teachers ($n = 869$, $M = 6.74$, $SD = 1.497$). Also, the test for item 2 did not show a statistically significant effect ($F = 1.156$, $df = 2$, $p = .318$) between teachers with varying years of teaching experience. The effect size using η^2 for years of experience (.019) indicates approximately 2% of the variance in self-efficacy beliefs can be explained. The experienced teachers ($n = 35$, $M = 6.97$, $SD = 1.382$) expressed higher self-efficacy beliefs than expert teachers ($n = 79$, $M = 6.72$, $SD = 1.395$) or novice teachers ($n = 11$, $M = 6.36$, $SD = 1.433$). Further, the test for item 2 showed a statistically significant effect ($F = 5.664$, $df = 2$, $p = .004$) as an interaction effect between teachers with varying years of teaching experience and different teacher training programs. The effect size using η^2 for years of experience (.087) indicates nearly 9% of the variance in self-efficacy beliefs can be explained. Finally, the r^2 (.101) for the Model of years of experience, type of training, and interaction of years by training indicates that overall 10% of the variance in means of self-efficacy beliefs can be explained. This is a moderate effect size.

The test for item 3 “How much can you do to control disruptive behavior in the

classroom?" did not show a statistically significant effect (F = .739, df = 1, p = .392) between teachers with different types of teacher training programs. The effect size using η^2 for years of experience (.006) indicates less than 1% of the variance in self-efficacy beliefs can be explained. Levene's test for equality of variances was met (F = 1.821, df = 5, p = .114).The alternative certification trained teachers (n = 39, M = 7.56, SD = 1.553) expressed higher self-efficacy beliefs than college of education trained teachers (n = 86, M = 7.51, SD = 1.225). Also, the test for item 3 did not show a statistically significant effect (F = .473, df = 2, p = .625) between teachers with varying years of teaching experience. The effect size using η^2 for years of experience (.008) indicates less than 1% of the variance in self-efficacy beliefs can be explained. The expert teachers (n = 79, M = 7.43, SD = 1.337) expressed higher self-efficacy beliefs than experienced teachers (n = 35, M = 7.69, SD = 1.345) or novice teachers (n = 11, M = 7.73, SD = 1.272). Further, the test for item 3 did not show a statistically significant effect (F = 1.047, df = 2, p = .354) as an interaction effect between teachers with varying years of teaching experience and different teacher training programs. The effect size using η^2 for years of experience (.017) indicates nearly 2% of the variance in self-efficacy beliefs can be explained. Finally, the r^2 (.027) for the Model of years of experience, type of training, and interaction of years by training indicates that overall nearly 3% of the variance in means of self-efficacy beliefs can be explained. This is a fairly small effect size.

The test for item 4 "How much can you do to motivate students who show low interest in school work?" did not show a statistically significant effect (F = .205, df = 1, p = .651) between teachers with different types of teacher training programs. The effect size using η^2 for years of experience (.002) indicates very little of the variance in self-efficacy beliefs can be explained.

Levene's test for equality of variances was met (F = .423, df = 5, p = .832).The college of education trained teachers (n = 86, M = 5.69, SD = 1.618) expressed higher self-efficacy beliefs than alternative certification trained teachers (n = 39, M = 6.63, SD = 1.512). Also, the test for item 4 did not show a statistically significant effect (F = .778, df = 2, p = .462) between teachers with varying years of teaching experience. The effect size using η^2 for years of experience (.013) indicates approximately 1% of the variance in self-efficacy beliefs can be explained. The experienced teachers (n = 35, M = 5.43, SD = 1.577) expressed higher self-efficacy beliefs than expert teachers (n = 79, M = 5.73, SD = 1.6075) or novice teachers (n = 11, M = 6.00, SD = 1.414). Further, the test for item 4 did not show a statistically significant effect (F = 1.443, df = 2, p = .240) as an interaction effect between teachers with varying years of teaching experience and different teacher training programs. The effect size using η^2 for years of experience (.024) indicates a little more than 2% of the variance in self-efficacy beliefs can be explained. Finally, the r^2 (.035) for the Model of years of experience, type of training, and interaction of years by training indicates that overall almost 4% of the variance in means of self-efficacy beliefs can be explained. This is a fairly small effect size.

The test for item 5 "To what extent can you make your expectations clear about student behavior?" did not show a statistically significant effect (F = .620, df = 1, p = .432) between teachers with different types of teacher training programs. The effect size using η^2 for years of experience (.005) indicates less than 1% of the variance in self-efficacy beliefs can be explained. Levene's test for equality of variances was met (F = 1.941, df = 5, p = .093).The college of education trained teachers (n = 86, M = 8.26, SD = .923) expressed higher self-efficacy beliefs than alternative certification trained teachers (n = 39, M = 8.00, SD = 1.170). Also, the test for

item 5 did not show a statistically significant effect ($F = 1.117$, $df = 2$, $p = .331$) between teachers with varying years of teaching experience. The effect size using η^2 for years of experience (.018) indicates nearly 2% of the variance in self-efficacy beliefs can be explained. The experienced teachers ($n = 35$, $M = 8.31$, $SD = .900$) expressed higher self-efficacy beliefs than novice teachers ($n = 11$, $M = 8.18$, $SD = .874$) or expert teachers (n = 79, $M = 8.12$, $SD = 1.074$). Further, the test for item 5 did not show a statistically significant effect ($F = .639$, $df = 2$, $p = .529$) as an interaction effect between teachers with varying years of teaching experience and different teacher training programs. The effect size using η^2 for years of experience (.011) indicates approximately 1% of the variance in self-efficacy beliefs can be explained. Finally, the r^2 (.035) for the Model of years of experience, type of training, and interaction of years by training indicates that overall nearly 4% of the variance in means of self-efficacy beliefs can be explained. This is a fairly small effect size.

The test for item 6 "How much can you do to get students to believe they can do well in school work?" showed a statistically significant effect ($F = 7.014$, $df = 1$, $p = .006$) between teachers with different types of teacher training programs. The effect size using η^2 for years of experience (.062) indicates over 6% of the variance in self-efficacy beliefs can be explained. Levene's test for equality of variances was met ($F = 1.361$, $df = 5$, $p = .244$). The alternative certification trained teachers ($n = 39$, $M = 7.05$, $SD = 1.486$) expressed higher self-efficacy beliefs than college of education trained teachers ($n = 86$, $M = 6.74$, $SD = 1.339$). Also, the test for item 6 did not show a statistically significant effect ($F = .483$, $df = 2$, $p = .618$) between teachers with varying years of teaching experience. The effect size using η^2 for years of experience (.008) indicates approximately 1% of the variance in self-efficacy beliefs can be

explained. The expert teachers (n = 79, M = 6.85, SD = 1.350) expressed higher self-efficacy beliefs than experienced teachers (n = 35, M = 6.83, SD = 1.361) or novice teachers (n = 11, M = 6.82, SD = 1.361). Further, the test for item 6 shows a statistically significant effect (F = 4.998, df = 2, p = .008) as an interaction effect between teachers with varying years of teaching experience and different teacher training programs. The effect size using η^2 for years of experience (.077) indicates nearly 8% of the variance in self-efficacy beliefs can be explained. Finally, the r^2 (.088) for the Model of years of experience, type of training, and interaction of years by training indicates that overall nearly 9% of the variance in means of self-efficacy beliefs can be explained. This is a moderate effect size.

The test for item 7 "How well can you respond to difficult questions from your students?" did not show a statistically significant effect (F = .852, df = 1, p = .358) between teachers with different types of teacher training programs. The effect size using η^2 for years of experience (.007) indicates nearly 1% of the variance in self-efficacy beliefs can be explained. Levene's test for equality of variances was met (F = .591, df = 5, p = .707). The college of education trained teachers (n = 86, M = 7.76, SD = 1.070) expressed higher self-efficacy beliefs than alternative certification trained teachers (n = 39, M = 7.72, SD = .887). Also, the test for item 7 did not show a statistically significant effect (F = 1.529, df = 2, p = .221) between teachers with varying years of teaching experience. The effect size using η^2 for years of experience (.025) indicates nearly 3% of the variance in self-efficacy beliefs can be explained. The expert teachers (n = 79, M = 7.82, SD = 1.022) expressed higher self-efficacy beliefs than experienced teachers (n = 35, M = 7.71, SD = .987) or novice teachers (n = 11, M = 7.36, SD = 1.027). Further, the test for item 7 did not show a statistically significant effect (F = 1.463, df =

2, p = .236) as an interaction effect between teachers with varying years of teaching experience and different teacher training programs. The effect size using η^2 for years of experience (.024) indicates approximately 2% of the variance in self-efficacy beliefs can be explained. Finally, the r^2 (.040) for the Model of years of experience, type of training, and interaction of years by training indicates that overall 4% of the variance in means of self-efficacy beliefs can be explained. This is a fairly small effect size.

The test for item 8 "How well can you establish routines to keep activities running smoothly?" did not show a statistically significant effect (F = .404, df = 1, p = .526) between teachers with different types of teacher training programs. The effect size using η^2 for years of experience (.003) indicates less than 1% of the variance in self-efficacy beliefs can be explained. Levene's test for equality of variances was met (F = .175, df = 5, p = .971). The alternative certification trained teachers (n = 39, M = 8.10, SD = 1.252) expressed higher self-efficacy beliefs than college of education trained teachers (n = 86, M = 8.01, SD = 1.111). Also, the test for item 8 did not show a statistically significant effect (F = .068, df = 2, p = .934) between teachers with varying years of teaching experience. The effect size using η^2 for years of experience (.001) indicates very little of the variance in self-efficacy beliefs can be explained. The expert teachers (n = 79, M = 8.06, SD = 1.139) expressed higher self-efficacy beliefs than both the novice teachers (n = 11, M = 8.00, SD = 1.095) and experienced teachers (n = 35, M = 8.00, SD = 1.237). Further, the test for item 8 did not show a statistically significant effect (F = .090, df = 2, p = .914) as an interaction effect between teachers with varying years of teaching experience and different teacher training programs. The effect size using η^2 for years of experience (.002) indicates less than 1% of the variance in self-efficacy beliefs can be explained.

Finally, the r^2 (.004) for the Model of years of experience, type of training, and interaction of years by training indicates that overall less than 1% of the variance in means of self-efficacy beliefs can be explained. This is a very small effect size.

The test for item 9 "How much can you do to help your students value learning?" did not show a statistically significant effect (F = .966, df = 1, p = .328) between teachers with different types of teacher training programs. The effect size using η^2 for years of experience (.008) indicates nearly 1% of the variance in self-efficacy beliefs can be explained. Levene's test for equality of variances was met (F = .923, df = 5, p = .469). The alternative certification trained teachers (n = 39, M = 6.51, SD = 1.620) expressed higher self-efficacy beliefs than college of education trained teachers (n = 86, M = 6.31, SD = 1.495). Also, the test for item 9 did not show a statistically significant effect (F = 1.472, df = 2, p = .234) between teachers with varying years of teaching experience. The effect size using η^2 for years of experience (.024) indicates a little more than 2% of the variance in self-efficacy beliefs can be explained. The novice teachers (n = 11, M = 6.55, SD = 1.214) expressed higher self-efficacy beliefs than expert teachers (n = 79, M = 6.46, SD = 1.616) or experienced teachers (n = 35, M = 6.12, SD = 1.430). Further, the test for item 9 did not show a statistically significant effect (F = 2.429, df = 2, p = .092) as an interaction effect between teachers with varying years of teaching experience and different teacher training programs. The effect size using η^2 for years of experience (.039) indicates nearly 4% of the variance in self-efficacy beliefs can be explained. Finally, the r^2 (.054) for the Model of years of experience, type of training, and interaction of years by training indicates that overall more than 5% of the variance in means of self-efficacy beliefs can be explained. This is a fairly small effect size.

The test for item 10 “How much can you gauge student comprehension of what you have taught?” did not show a statistically significant effect ($F = 1.080$, $df = 1$, $p = .301$) between teachers with different types of teacher training programs. The effect size using η^2 for years of experience (.009) indicates less than 1% of the variance in self-efficacy beliefs can be explained. Levene’s test for equality of variances was met ($F = 1.154$, $df = 5$, $p = .336$).The alternative certification trained teachers ($n = 39$, $M = 7.51$, $SD = .914$) expressed higher self-efficacy beliefs than college of education trained teachers ($n = 86$, $M = 7.38$, $SD = 1.198$). Also, the test for item 10 did not show a statistically significant effect ($F = .162$, $df = 2$, $p = .851$) between teachers with varying years of teaching experience. The effect size using η^2 for years of experience (.003) indicates very little of the variance in self-efficacy beliefs can be explained. The experienced teachers ($n = 35$, $M = 7.49$, $SD = 1.197$) expressed higher self-efficacy beliefs than novice teachers ($n = 11$, $M = 7.45$, $SD = .820$) or expert teachers ($n = 79$, $M = 7.39$, $SD = 1.124$). Further, the test for item 10 did not show a statistically significant effect ($F = .488$, $df = 2$, $p = .615$) as an interaction effect between teachers with varying years of teaching experience and different teacher training programs. The effect size using η^2 for years of experience (.008) indicates nearly 1% of the variance in self-efficacy beliefs can be explained. Finally, the r^2 (.012) for the Model of years of experience, type of training, and interaction of years by training indicates that overall approximately 1% of the variance in means of self-efficacy beliefs can be explained. This is a very small effect size.

The test for item 11 “To what extent can you craft good questions for your students?” did not show a statistically significant effect ($F = .207$, $df = 1$, $p = .650$) between teachers with different types of teacher training programs. The effect size using η^2 for years of experience

(.002) indicates very little of the variance in self-efficacy beliefs can be explained. Levene's test for equality of variances was met (F = .478, df = 5, p = .792).The college of education trained teachers (n = 86, M = 7.62, SD = 1.176) expressed higher self-efficacy beliefs than alternative certification trained teachers (n = 39, M = 7.41, SD = 1.093). Also, the test for item 11 did not show a statistically significant effect (F = 2.323, df = 2, p = .102) between teachers with varying years of teaching experience. The effect size using η^2 for years of experience (.038) indicates nearly 4% of the variance in self-efficacy beliefs can be explained. The experienced teachers (n = 35, M = 7.64, SD = 1.160) expressed higher self-efficacy beliefs than expert teachers (n = 79, M = 7.61, SD = 1.100) or novice teachers (n = 11, M = 6.91, SD = 1.375). Further, the test for item 11 did not show a statistically significant effect (F = 2.398, df = 2, p = 1.855) as an interaction effect between teachers with varying years of teaching experience and different teacher training programs. The effect size using η^2 for years of experience (.030) indicates 3% of the variance in self-efficacy beliefs can be explained. Finally, the r^2 (.063) for the Model of years of experience, type of training, and interaction of years by training indicates that overall a little more than 6% of the variance in means of self-efficacy beliefs can be explained. This is a fairly small effect size.

The test for item 12 "How much can you do to foster creativity?" did not show a statistically significant effect (F = 1.925, df = 1, p = .168) between teachers with different types of teacher training programs. The effect size using η^2 for years of experience (.016) indicates nearly 2% of the variance in self-efficacy beliefs can be explained. Levene's test (F = 3.455, df = 5, p = .006) is statistically significant. However, test results are robust when the sample exceeds 50 participants. The alternative certification trained teachers (n = 39, M = 6.69, SD = 1.641) expressed higher self-efficacy beliefs than college of education trained teachers (n = 86,

M = 6.47, *SD* = 1.452). Also, the test for item 12 did not show a statistically significant effect (*F* = 1.595, *df* = 2, *p* = .207) between teachers with varying years of teaching experience. The effect size using η^2 for years of experience (.026) indicates nearly 3% of the variance in self-efficacy beliefs can be explained. The experienced teachers (*n* = 35, *M* = 6.71, *SD* = 1.363) expressed higher self-efficacy beliefs than expert teachers (*n* = 79, *M* = 6.54, *SD* = 1.491) or novice teachers (*n* = 11, *M* = 6.00, *SD* = 2.049). Further, the test for item 12 did not show a statistically significant effect (*F* = 2.348, *df* = 2, *p* = .100) as an interaction effect between teachers with varying years of teaching experience and different teacher training programs. The effect size using η^2 for years of experience (.038) indicates nearly 4% of the variance in self-efficacy beliefs can be explained. Finally, the r^2 (.060) for the Model of years of experience, type of training, and interaction of years by training indicates that overall 6% of the variance in means of self-efficacy beliefs can be explained. This is a fairly small effect size.

The test for item 13 "How much can you do to get children to follow the classroom rules?" did not show a statistically significant effect (*F* = 1.129, *df* = 1, *p* = .290) between teachers with different types of teacher training programs. The effect size using η^2 for years of experience (.009) indicates nearly 1% of the variance in self-efficacy beliefs can be explained. Levene's test for equality of variances was met (*F* = 1.132, *df* = 5, *p* = .347).The alternative certification trained teachers (*n* = 39, *M* = 7.72, *SD* = 1.376) expressed higher self-efficacy beliefs than college of education trained teachers (*n* = 86, *M* = 7.53, *SD* = 1.234). Also, the test for item 13 did not show a statistically significant effect (*F* = .236, *df* = 2, *p* = .790) between teachers with varying years of teaching experience. The effect size using η^2 for years of experience (.004) indicates very little of the variance in self-efficacy beliefs can be explained.

The expert teachers (n = 79, M = 7.68, SD = 1.225) expressed higher self-efficacy beliefs than novice teachers (*n* = 11, *M* = 7.45, *SD* = .934) or experienced teachers (*n* = 35, *M* = 7.43, *SD* = 1.481). Further, the test for item 13 did not show a statistically significant effect (*F* = 1.169, *df* = 2, *p* = .314) as an interaction effect between teachers with varying years of teaching experience and different teacher training programs. The effect size using η^2 for years of experience (.019) indicates nearly 2% of the variance in self-efficacy beliefs can be explained. Finally, the r^2 (.036) for the Model of years of experience, type of training, and interaction of years by training indicates that overall nearly 4% of the variance in means of self-efficacy beliefs can be explained. This is a fairly small effect size.

The test for item 14 "How much can you do to improve the understanding of a student who is failing?" did not show a statistically significant effect (*F* = 3.687, *df* = 1, *p* = .057) between teachers with different types of teacher training programs. The effect size using η^2 for years of experience (.030) indicates 3% of the variance in self-efficacy beliefs can be explained. Levene's test for equality of variances was met (*F* = 2.024, *df* = 5, *p* = .080).The alternative certification trained teachers (*n* = 39, *M* = 6.67, *SD* = 1.132) expressed higher self-efficacy beliefs than college of education trained teachers (*n* = 86, *M* = 6.21, *SD* = 1.379). Also, the test for item 14 did not show a statistically significant effect (*F* = .202, *df* = 2, *p* = .817) between teachers with varying years of teaching experience. The effect size using η^2 for years of experience (.032) indicates very little of the variance in self-efficacy beliefs can be explained. The experienced teachers (*n* = 35, *M* = 6.47, *SD* = 1.118) expressed higher self-efficacy beliefs than novice teachers (*n* = 11, *M* = 6.36, *SD* = 1.362) or expert teachers (*n* = 79, *M* = 6.29, *SD* = 1.406). Further, the test for item 14 did not show a statistically significant effect (*F* = 1.174, *df* =

2, p = .313) as an interaction effect between teachers with varying years of teaching experience and different teacher training programs. The effect size using η^2 for years of experience (.019) indicates nearly 2% of the variance in self-efficacy beliefs can be explained. Finally, the r^2 (.048) for the Model of years of experience, type of training, and interaction of years by training indicates that overall nearly 5% of the variance in means of self-efficacy beliefs can be explained. This is a fairly small effect size.

The test for item 15 "How much can you do to calm a student who is disruptive or noisy?" did not show a statistically significant effect (F = 1.622, df = 1, p = .205) between teachers with different types of teacher training programs. The effect size using η^2 for years of experience (.013) indicates approximately 1% of the variance in self-efficacy beliefs can be explained. Levene's test for equality of variances was met (F = .923, df = 5, p = .469).The alternative certification trained teachers (n = 39, M = 7.21, SD = 1.576) expressed higher self-efficacy beliefs than college of education trained teachers (n = 86, M = 6.93, SD = 1.576). Also, the test for item 15 did not show a statistically significant effect (F = .243, df = 2, p = .785) between teachers with varying years of teaching experience. The effect size using η^2 for years of experience (.004) indicates very little of the variance in self-efficacy beliefs can be explained. The expert teachers (n = 79, M = 7.04, SD = 1.480) expressed higher self-efficacy beliefs than novice teachers (n = 11, M = 7.00, SD = 1.265) or experienced teachers (n = 35, M = 6.97, SD = 1.618). Further, the test for item 15 did not show a statistically significant effect (F = .702, df = 2, p = .498) as an interaction effect between teachers with varying years of teaching experience and different teacher training programs. The effect size using η^2 for years of experience (.012) indicates a little more than 1% of the variance in self-efficacy beliefs can be explained. Finally,

the r^2 (.020) for the Model of years of experience, type of training, and interaction of years by training indicates that overall 2% of the variance in means of self-efficacy beliefs can be explained. This is a very small effect size.

The test for item 16 "How well can you establish a classroom management system with each group of students?" did not show a statistically significant effect (F = 1.699, df = 1, p = .195) between teachers with different types of teacher training programs. The effect size using η^2 for years of experience (.014) indicates approximately 1% of the variance in self-efficacy beliefs can be explained. Levene's test for equality of variances was met (F = .428, df = 5, p = .828). The alternative certification trained teachers (n = 39, M = 7.87, SD = 1.174) expressed higher self-efficacy beliefs than college of education trained teachers (n = 86, M = 7.74, SD = 1.200). Also, the test for item 16 did not show a statistically significant effect (F = 1.052, df = 2, p = .352) between teachers with varying years of teaching experience. The effect size using η^2 for years of experience (.017) indicates nearly 2% of the variance in self-efficacy beliefs can be explained. The expert teachers (n = 79, M = 7.90, SD = 1.183) expressed higher self-efficacy beliefs than experienced teachers (n = 35, M = 7.60, SD = 1.193) or novice teachers (n = 11, M = 7.55, SD = 1.214). Further, the test for item 16 did not show a statistically significant effect (F = .491, df = 2, p = .613) as an interaction effect between teachers with varying years of teaching experience and different teacher training programs. The effect size using η^2 for years of experience (.008) indicates nearly 1% of the variance in self-efficacy beliefs can be explained. Finally, the r^2 (.031) for the Model of years of experience, type of training, and interaction of years by training indicates that overall 3% of the variance in means of self-efficacy beliefs can be explained. This is a fairly small effect size.

The test for item 17 “How much can you do to adjust your lesson to the proper level for individual students?” did not show a statistically significant effect (F = .386, df = 1, p = .536) between teachers with different types of teacher training programs. The effect size using η^2 for years of experience (.003) indicates very little of the variance in self-efficacy beliefs can be explained. Levene’s test for equality of variances was met (F = .827, df = 5, p = .533). The college of education trained teachers (n = 86, M = 6.94, SD = 1.498) expressed higher self-efficacy beliefs than alternative certification trained teachers (n = 39, M = 6.85, SD = 1.670). Also, the test for item 17 did not show a statistically significant effect (F = .160, df = 2, p = .852) between teachers with varying years of teaching experience. The effect size using η^2 for years of experience (.003) indicates very little of the variance in self-efficacy beliefs can be explained. The novice teachers (n = 11, M = 7.09, SD = 1.300) expressed higher self-efficacy beliefs than experienced teachers (n = 35, M = 6.91, SD = 1.738) or expert teachers (n = 79, M = 6.88, SD = 1.510). Further, the test for item 17 did not show a statistically significant effect (F = .939, df = 2, p = .394) as an interaction effect between teachers with varying years of teaching experience and different teacher training programs. The effect size using η^2 for years of experience (.016) indicates less than 2% of the variance in self-efficacy beliefs can be explained. Finally, the r^2 (.018) for the Model of years of experience, type of training, and interaction of years by training indicates that overall nearly 2% of the variance in means of self-efficacy beliefs can be explained. This is a very small effect size.

The test for item 18 “How much can use a variety of assessment strategies?” did not show a statistically significant effect (F = .591, df = 1, p = .443) between teachers with different types of teacher training programs. The effect size using η^2 for years of experience (.005)

indicates very little of the variance in self-efficacy beliefs can be explained. Levene's test for equality of variances was met (F = .871, df = 5, p = .503). The alternative certification trained teachers (n = 39, M = 7.51, SD = 1.571) expressed higher self-efficacy beliefs than college of education trained teachers (n = 86, M = 7.25, SD = 1.637). Also, the test for item 18 did not show a statistically significant effect (F = .304, df = 2, p = .738) between teachers with varying years of teaching experience. The effect size using η^2 for years of experience (.005) indicates very little of the variance in self-efficacy beliefs can be explained. The experienced teachers (n = 35, M = 7.55, SD = 1.519) expressed higher self-efficacy beliefs than expert teachers (n = 79, M = 7.26, SD = 1.720) or novice teachers (n = 11, M = 7.18, SD = 1.079). Further, the test for item 18 did not show a statistically significant effect (F = .405, df = 2, p = .668) as an interaction effect between teachers with varying years of teaching experience and different teacher training programs. The effect size using η^2 for years of experience (.007) indicates less than 1% of the variance in self-efficacy beliefs can be explained. Finally, the r^2 (.020) for the Model of years of experience, type of training, and interaction of years by training indicates that overall 2% of the variance in means of self-efficacy beliefs can be explained. This is a small effect size.

The test for item 19 "How well can you keep a few problem children from ruining an entire lesson?" did not show a statistically significant effect (F = .193, df = 1, p = .661) between teachers with different types of teacher training programs. The effect size using η^2 for years of experience (.002) indicates very little of the variance in self-efficacy beliefs can be explained. Levene's test (F = 3.771, df = 5, p = .003) is statistically significant. However, test results are robust when the sample exceeds 50 participants. The college of education trained teachers (n = 86, M = 7.16, SD = 1.454) expressed higher self-efficacy beliefs than alternative certification

trained teachers (n = 39, M = 7.10, SD = 1.984). Also, the test for item 19 did not show a statistically significant effect (F = .808, df = 2, p = .448) between teachers with varying years of teaching experience. The effect size using η^2 for years of experience (.013) indicates approximately 1% of the variance in self-efficacy beliefs can be explained. The novice teachers (n = 11, M = 7.45, SD = 1.214) expressed higher self-efficacy beliefs than expert teachers (n = 79, M = 7.27, SD = 1.525) or experienced teachers (n = 35, M = 6.77, SD = 1.926). Further, the test for item 19 did not show a statistically significant effect (F = .465, df = 2, p = .629) as an interaction effect between teachers with varying years of teaching experience and different teacher training programs. The effect size using η^2 for years of experience (.008) indicates nearly 1% of the variance in self-efficacy beliefs can be explained. Finally, the r^2 (.029) for the Model of years of experience, type of training, and interaction of years by training indicates that overall nearly 3% of the variance in means of self-efficacy beliefs can be explained. This is a fairly small effect size.

The test for item 20 "To what extent can you provide an alternative explanations or example when students are confused?" did not show a statistically significant effect (F = .147, df = 1, p = .702) between teachers with different types of teacher training programs. The effect size using η^2 for years of experience (.001) indicates very little of the variance in self-efficacy beliefs can be explained. Levene's test for equality of variances was met (F = .261, df = 5, p = .934). The alternative certification trained teachers (n = 39, M = 7.86, SD = 1.056) expressed higher self-efficacy beliefs than college of education trained teachers (n = 86, M = 7.73, SD = 1.010). Also, the test for item 20 did not show a statistically significant effect (F = .149, df = 2, p = .861) between teachers with varying years of teaching experience. The effect size using η^2

for years of experience (.003) indicates very little of the variance in self-efficacy beliefs can be explained. The experienced teachers (n = 35, M = 7.81, SD = 1.070) expressed higher self-efficacy beliefs than expert teachers (n = 79, M = 7.77, SD = 1.012) or novice teachers (n = 11, M = 7.64, SD = 1.027). Further, the test for item 20 did not show a statistically significant effect (F = .356, df = 2, p = .701) as an interaction effect between teachers with varying years of teaching experience and different teacher training programs. The effect size using η^2 for years of experience (.006) indicates less than 1% of the variance in self-efficacy beliefs can be explained. Finally, the r^2 (.013) for the Model of years of experience, type of training, and interaction of years by training indicates that overall a little more than 1% of the variance in means of self-efficacy beliefs can be explained. This is a very small effect size.

The test for item 21 "How well can you respond to defiant students?" did not show a statistically significant effect (F = .332, df = 1, p = .565) between teachers with different types of teacher training programs. The effect size using η^2 for years of experience (.003) indicates very little of the variance in self-efficacy beliefs can be explained. Levene's test for equality of variances was met (F = .791, df = 5, p = .558). The alternative certification trained teachers (n = 39, M = 7.23, SD = 1.693) expressed higher self-efficacy beliefs than college of education trained teachers (n = 86, M = 7.20, SD = 1.454). Also, the test for item 21 did not show a statistically significant effect (F = .129, df = 2, p = .879) between teachers with varying years of teaching experience. The effect size using η^2 for years of experience (.002) indicates very little of the variance in self-efficacy beliefs can be explained. The experienced teachers (n = 35, M = 7.23, SD = 1.456) expressed higher self-efficacy beliefs than expert teachers (n = 79, M = 7.22, SD = 1.558) or novice teachers (n = 35, M = 7.09, SD = 1.640). Further, the test for item 21 did

not show a statistically significant effect (F = .499, df = 2, p = .608) as an interaction effect between teachers with varying years of teaching experience and different teacher training programs. The effect size using η^2 for years of experience (.008) indicates less than 1% of the variance in self-efficacy beliefs can be explained. Finally, the r^2 (.009) for the Model of years of experience, type of training, and interaction of years by training indicates that overall less than 1% of the variance in means of self-efficacy beliefs can be explained. This is a very small effect size.

The test for item 22 "How much can you assist families in helping their children do well in school?" did not show a statistically significant effect (F = .252, df = 1, p = .617) between teachers with different types of teacher training programs. The effect size using η^2 for years of experience (.002) indicates very little of the variance in self-efficacy beliefs can be explained. Levene's test for equality of variances was met (F = .819, df = 5, p = .538). The alternative certification trained teachers (n = 39, M = 5.84, SD = 1.785) expressed higher self-efficacy beliefs than college of education trained teachers (n = 39, M = 5.53, SD = 1.754). Also, the test for item 22 did not show a statistically significant effect (F = 1.365, df = 2, p = .259) between teachers with varying years of teaching experience. The effect size using η^2 for years of experience (.022) indicates approximately 2% of the variance in self-efficacy beliefs can be explained. The novice teachers (n = 11, M = 6.33, SD = 1.303) expressed higher self-efficacy beliefs than expert teachers (n = 79, M = 5.68, SD = 1.758) or experienced teachers (n = 35, M = 5.29, SD = 1.856). Further, the test for item 22 did not show a statistically significant effect (F = .009, df = 2, p = .991) as an interaction effect between teachers with varying years of teaching experience and different teacher training programs. The effect size using η^2 for years of

experience (.000) indicates none of the variance in self-efficacy beliefs can be explained. Finally, the r^2 (.030) for the Model of years of experience, type of training, and interaction of years by training indicates that overall 3% of the variance in means of self-efficacy beliefs can be explained. This is a fairly small effect size.

The test for item 23 "How well can you implement alternative strategies in your classroom?" did not show a statistically significant effect (F = .181, df = 1, p = .671) between teachers with different types of teacher training programs. The effect size using η^2 for years of experience (.002) indicates very little of the variance in self-efficacy beliefs can be explained. Levene's test for equality of variances was met (F = .439, df = 5, p = .820). The college of education trained teachers (n = 86, M = 7.16, SD = 1.571) expressed higher self-efficacy beliefs than alternative certification trained teachers (n = 39, M = 7.08, SD = 1.511). Also, the test for item 23 did not show a statistically significant effect (F = .355, df = 2, p = .702) between teachers with varying years of teaching experience. The effect size using η^2 for years of experience (.006) indicates less than 1% of the variance in self-efficacy beliefs can be explained. The experienced teachers (n = 35, M = 7.37, SD = 1.373) expressed higher self-efficacy beliefs than novice teachers (n = 11, M = 7.27, SD = 1.348) or expert teachers (n = 79, M = 7.01, SD = 1.645). Further, the test for item 23 did not show a statistically significant effect (F = .473, df = 2, p = .625) as an interaction effect between teachers with varying years of teaching experience and different teacher training programs. The effect size using η^2 for years of experience (.008) indicates less than 1% of the variance in self-efficacy beliefs can be explained. Finally, the r^2 (.021) for the Model of years of experience, type of training, and interaction of years by training indicates that overall 2% of the variance in means of self-efficacy beliefs can be explained. This

is a small effect size.

The test for item 24 “How well can you provide appropriate challenges for the very capable students?” did not show a statistically significant effect (F = 1.235, df = 1, p = .269) between teachers with different types of teacher training programs. The effect size using η^2 for years of experience (.010) indicates 1% of the variance in self-efficacy beliefs can be explained. Levene’s test for equality of variances was met (F = 1.364, df = 5, p = .243). The alternative certification trained teachers (n = 39, M = 7.56, SD = 1.252) expressed higher self-efficacy beliefs than college of education trained teachers (n = 39, M = 7.35, SD = 1.477). Also, the test for item 24 did not show a statistically significant effect (F = 1.713, df = 2, p = .185) between teachers with varying years of teaching experience. The effect size using η^2 for years of experience (.028) indicates nearly 3% of the variance in self-efficacy beliefs can be explained. The experienced teachers (n = 35, M = 7.61, SD = 1.373) expressed higher self-efficacy beliefs than expert teachers (n = 79, M = 7.42, SD = 1.402) or novice teachers (n = 11, M = 6.82, SD = 1.537). Further, the test for item 24 did not show a statistically significant effect (F = .634, df = 2, p = .532) as an interaction effect between teachers with varying years of teaching experience and different teacher training programs. The effect size using η^2 for years of experience (.011) indicates approximately 1% of the variance in self-efficacy beliefs can be explained. Finally, the r^2 (.040) for the Model of years of experience, type of training, and interaction of years by training indicates that overall 4% of the variance in means of self-efficacy beliefs can be explained. This is a fairly moderate effect size.

Three of the means indicated a statistically significant difference. The interaction effect for item 2 “How much can you do to help your students think critically?” and both the training

program and interaction effect for item 6 “How much can you do to get students to believe they can do well in school work?” were statistically significant. For eight items, the teachers with college of education training reported higher levels of self-efficacy, while for sixteen items, the teachers with alternative certification training reported higher levels of self-efficacy. The novice teachers reported higher self-efficacy beliefs for seven items, the experienced teachers reported higher self-efficacy beliefs for eleven items, and the expert teachers reported higher self-efficacy beliefs for six items. The results of the two-way factorial ANOVA tests provide evidence that supports the conclusion that there is little difference in self-efficacy beliefs for teacher training program, for years of teaching experience, or for the interaction effect between training and years.

A two-way factorial analysis of variance (ANOVA) was conducted on the 6 paired items created specifically for this research to determine whether or not there was an interaction effect between type of teacher training and number of years of experience. All tests were conducted using an alpha of .05. There were three null hypotheses. First, there would be no difference in the means between the college of education trained teachers and the alternative certification trained teachers. Therefore, the sample means would be equal and the null hypothesis could be represented as: $H = \mu_{college} = \mu_{alternative}$. Second, there would be no difference in the means among the novice teachers with three or less years of experience, the experienced teachers with four to nine years of experience, and the expert teachers with ten or more years of experience. Therefore, the sample means would be equal and the null hypothesis could be represented as: $H = \mu_{novice} = \mu_{experienced} = \mu_{expert}$. Finally, there would be no interaction effect between the means for the type of teacher training and the number of years of teaching experience. Thus, the sample

means would be equal and the null hypothesis could be represented as: H = μtraining = μyears. Table 29 shows the between-subject effects.

Table 29

Between-Subject Effects: Items 25-30

Questionnaire Item		*df*	*F*	*sig.*	η^2
Training					
25 student engagement	years	2	.794	.454	.013
	training	1	3.101	.081	.025
	years X training	2	.166	.847	.003
27 instructional strategies	years	2	.337	.714	.006
	training	1	5.081	* .026	.041
	years X training	2	.915	.403	.015
29 classroom management	years	2	1.807	.169	.029
	training	1	.523	.471	.004
	years X training	2	.047	.954	.001
Experience					
26 student engagement	years	2	.981	.378	.016
	training	1	.774	.381	.006
	years X training	2	2.004	.139	.033
28 instructional strategies	years	2	2.145	.122	.035
	training	1	.483	.489	.004
	years X training	2	.561	.572	.009
30 classroom management	years	2	4.739	* .010	.074
	training	1	3.255	.074	.027
	years X training	2	5.031	* .008	.078

* $p < .05$

The test for item 25 "How well did your teacher training program prepare you to effectively engage students?" did not show a statistically significant effect ($F = 3.101$, $df = 1$, $p = .081$) between teachers with different types of teacher training programs. The effect size using η^2

for years of experience (.025) indicates a little more than 2% of the variance in self-efficacy beliefs can be explained. Levene's test for equality of variances was met (F = .424, df = 5, p = .832). The college of education trained teachers (n = 86, M = 3.19, SD = 1.260) expressed higher self-efficacy beliefs than alternative certification trained teachers (n = 39, M = 2.79, SD = 1.380). Also, the test for item 25 did not show a statistically significant effect (F = .794, df = 2, p = .454) between teachers with varying years of teaching experience. The effect size using η^2 for years of experience (.013) indicates approximately 1% of the variance in self-efficacy beliefs can be explained. The experienced teachers (n = 35, M = 3.23, SD = 1.239) expressed higher self-efficacy beliefs than novice teachers (n = 11, M = 3.18, SD = 1.401) or expert teachers (n = 79, M = 2.97, SD = 1.330). Further, the test for item 25 did not show a statistically significant effect (F = .166, df = 2, p = .847) as an interaction effect between teachers with varying years of teaching experience and different teacher training programs. The effect size using η^2 for years of experience (.003) indicates less than 1% of the variance in self-efficacy beliefs can be explained. Finally, the r^2 (.037) for the Model of years of experience, type of training, and interaction of years by training indicates that overall nearly 4% of the variance in means of self-efficacy beliefs can be explained. This is a fairly small effect size.

The test for item 26 "How well has your personal classroom experience prepared you to effectively engage students?" did not show a statistically significant effect (F = .774, df = 1, p = .381) between teachers with different types of teacher training programs. The effect size using η^2 for years of experience (.006) indicates less than 1% of the variance in self-efficacy beliefs can be explained. Levene's test (F = 4.429, df = 5, p = .001) is statistically significant. However, test results are robust when the sample exceeds 50 participants. The college of education trained

teachers (n = 86, M = 4.69, SD = .599) expressed higher self-efficacy beliefs than alternative certification trained teachers (n = 39, M = 4.62, SD = .633). Also, the test for item 26 did not show a statistically significant effect (F = .981, df = 2, p = .378) between teachers with varying years of teaching experience. The effect size using η^2 for years of experience (.016) indicates nearly 2% of the variance in self-efficacy beliefs can be explained. The expert teachers (n = 79, M = 4.75, SD = .518) expressed higher self-efficacy beliefs than novice teachers (n = 11, M = 4.55, SD = .522) or experienced teachers (n = 35, M = 4.51, SD = .781). Further, the test for item 26 did not show a statistically significant effect (F = 2.004, df = 2, p = .139) as an interaction effect between teachers with varying years of teaching experience and different teacher training programs. The effect size using η^2 for years of experience (.033) indicates more than 3% of the variance in self-efficacy beliefs can be explained. Finally, the r^2 (.064) for the Model of years of experience, type of training, and interaction of years by training indicates that overall more than 6% of the variance in means of self-efficacy beliefs can be explained. This is a fairly moderate effect size.

The test for item 27 "How well did your teacher training program prepare you to effectively implement instructional strategies?" showed a statistically significant effect (F = 5.081, df = 1, p = .026) between teachers with different types of teacher training programs. The effect size using η^2 for years of experience (.041) indicates 4% of the variance in self-efficacy beliefs can be explained. Levene's test for equality of variances was met (F = 1.308, df = 5, p = .265).The college of education trained teachers (n = 86, M = 3.41, SD = 1.109) expressed higher self-efficacy beliefs than alternative certification trained teachers (n = 39, M = 2.97, SD = 1.246). Also, the test for item 27 did not show a statistically significant effect (F = .337, df = 2, p = .714)

between teachers with varying years of teaching experience. The effect size using η^2 for years of experience (.006) indicates less than 1% of the variance in self-efficacy beliefs can be explained. The novice teachers (n = 11, M = 3.36, SD = 1.502) expressed higher self-efficacy beliefs than expert teachers (n = 79, M = 3.27, SD = 1.151) or experienced teachers (n = 35, M = 3.26, SD = 1.120). Further, the test for item 27 did not show a statistically significant effect (F = .915, df = 2, p = .403) as an interaction effect between teachers with varying years of teaching experience and different teacher training programs. The effect size using η^2 for years of experience (.015) indicates more than 1% of the variance in self-efficacy beliefs can be explained. Finally, the r^2 (.049) for the Model of years of experience, type of training, and interaction of years by training indicates that overall nearly 5% of the variance in means of self-efficacy beliefs can be explained. This is a fairly small effect size.

The test for item 28 "How well has your personal classroom experience prepared you to effectively implement instructional strategies?" did not show a statistically significant effect (F = .483, df = 1, p = .489) between teachers with different types of teacher training programs. The effect size using η^2 for years of experience (.004) indicates less than 1% of the variance in self-efficacy beliefs can be explained. Levene's test (F = 2.793, df = 5, p = .020) is statistically significant. However, test results are robust when the sample exceeds 50 participants. The college of education trained teachers (n = 86, M = 4.66, SD = .625) expressed higher self-efficacy beliefs than alternative certification trained teachers (n = 39, M = 4.62, SD = .590). Also, the test for item 28 did not show a statistically significant effect (F = 2.145, df = 2, p = .122) between teachers with varying years of teaching experience. The effect size using η^2 for years of experience (.035) indicates more than 3% of the variance in self-efficacy beliefs can be

explained. The expert teachers (n = 79, M = 4.75, SD = .518) expressed higher self-efficacy beliefs than experienced teachers (n = 35, M = 4.49, SD = .742) or novice teachers (n = 11, M = 4.45, SD = .688). Further, the test for item 28 did not show a statistically significant effect (F = .561, df = 2, p = .572) as an interaction effect between teachers with varying years of teaching experience and different teacher training programs. The effect size using η^2 for years of experience (.009) indicates nearly 1% of the variance in self-efficacy beliefs can be explained. Finally, the r^2 (.054) for the Model of years of experience, type of training, and interaction of years by training indicates that overall more than 5% of the variance in means of self-efficacy beliefs can be explained. This is a fairly small effect size.

The test for item 29 "How well did your teacher training program prepare you to effectively manage your classroom and your students?" did not show a statistically significant effect (F = .523, df = 1, p = .471) between teachers with different types of teacher training programs. The effect size using η^2 for years of experience (.004) indicates less than 1% of the variance in self-efficacy beliefs can be explained. Levene's test for equality of variances was met (F = .494, df = 5, p = .780). The college of education trained teachers (n = 86, M = 2.95, SD = 1.345) expressed higher self-efficacy beliefs than alternative certification trained teachers (n = 39, M = 2.77, SD = 1.477). Also, the test for item 29 did not show a statistically significant effect (F = 1.807, df = 2, p = .169) between teachers with varying years of teaching experience. The effect size using η^2 for years of experience (.029) indicates nearly 3% of the variance in self-efficacy beliefs can be explained. The novice teachers (n = 11, M = 3.45, SD = 1.293) expressed higher self-efficacy beliefs than experienced teachers (n = 35, M = 3.06, SD = 1.434) or expert teachers (n = 79, M = 2.75, SD = 1.363). Further, the test for item 29 did not show a statistically

significant effect (F = .047, df = 2, p = .954) as an interaction effect between teachers with varying years of teaching experience and different teacher training programs. The effect size using η^2 for years of experience (.001) indicates very little of the variance in self-efficacy beliefs can be explained. Finally, the r^2 (.037) for the Model of years of experience, type of training, and interaction of years by training indicates that overall nearly 4% of the variance in means of self-efficacy beliefs can be explained. This is a fairly small effect size.

The test for item 30 "How well has your personal classroom experience prepared you to effectively manage your classroom and your students?" did not show a statistically significant effect (F = 3.255, df = 1, p = .074) between teachers with different types of teacher training programs. The effect size using η^2 for years of experience (.027) indicates nearly 3% of the variance in self-efficacy beliefs can be explained. Levene's test (F = 12.8321, df = 5, p = .000) is statistically significant. However, test results are robust when the sample exceeds 50 participants. The college of education trained teachers (n = 86, M = 4.77, SD = .567) expressed higher self-efficacy beliefs than alternative certification trained teachers (n = 39, M = 4.67, SD = .577). Also, the test for item 30 showed a statistically significant effect (F = 4.739, df = 2, p = .010) between teachers with varying years of teaching experience. The effect size using η^2 for years of experience (.074) indicates more than 7% of the variance in self-efficacy beliefs can be explained. The expert teachers (n = 79, M = 4.84, SD = .406) expressed higher self-efficacy beliefs than experienced teachers (n = 35, M = 4.63, SD = .646) or novice teachers (n = 11, M = 4.36, SD = 1.027). Further, the test for item 30 showed a statistically significant effect (F = 5.031, df = 2, p = .008) as an interaction effect between teachers with varying years of teaching experience and different teacher training programs. The effect size using η^2 for years of

experience (.078) indicates nearly 8% of the variance in self-efficacy beliefs can be explained. Finally, the r^2 (.140) for the Model of years of experience, type of training, and interaction of years by training indicates that overall 14% of the variance in means of self-efficacy beliefs can be explained. This is a moderate effect size.

Two of the means indicated a statistically significant difference. Item 27 "How well did your teacher training prepared you to effectively implement instructional strategies?" was statistically significant for teacher training program and Item 30 "How well has your personal classroom experience prepared you to effectively manage your classroom and your students?" was statistically significant for both years of experience and the interaction effect of training by years. For all six items, the college of education trained teachers reported higher levels of self-efficacy than the alternative certification trained teachers. For two items, the novice teachers reported higher self-efficacy beliefs, for one item the experienced teachers reported higher self-efficacy beliefs, and for three items the expert teachers reported higher self-efficacy beliefs. The results of the two-way factorial ANOVA tests provide evidence that supports the conclusion that there is little difference in self-efficacy beliefs between teachers with different training programs, teachers with varying years of experience, or the interaction effect of training by years.

The profile plots of the interaction effects of training by years produced a noteworthy pattern. Item 25, Item 27 and Item 29 ask teachers to determine the effectiveness of their teacher training program. For each of these items, the means for the level of self-efficacy for novice, experienced, and expert teachers are higher for college of education training than for alternative certification training. For novice teachers, there is a considerable difference in means for student engagement and instructional strategies, then a slight difference in the mean for management.

For experienced and expert teachers, the differences in means are not as sizable. Figures 12, 13, and 14 illustrate the decreases.

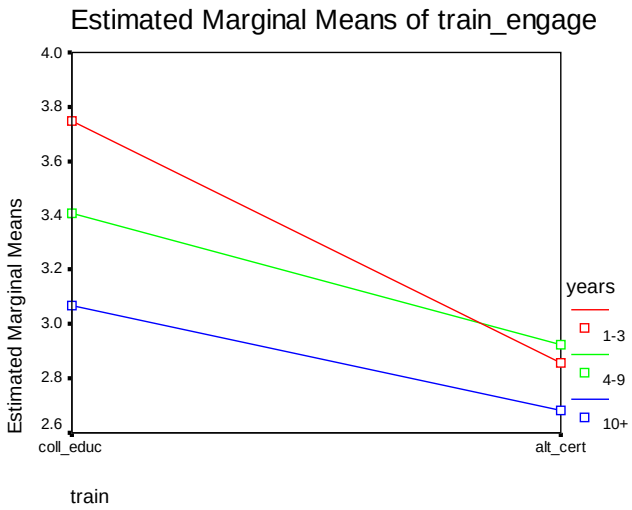

Figure 12

Profile Plot: Item 25

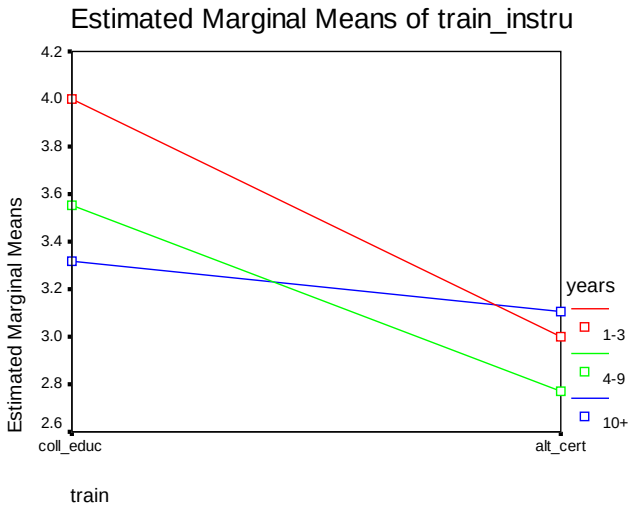

Figure 13

Profile Plot: Item 27

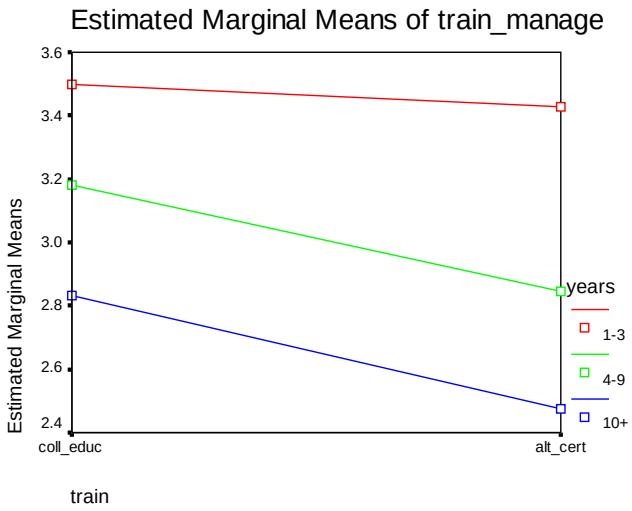

Figure 14

Profile Plot: Item 29

Item 26, Item 28 and Item 30 ask teachers to determine the effectiveness of their personal classroom experience. For each of these items, the means for the novice teachers is dramatically higher for college of education training than for alternative certification training. The means for the experienced teachers with college of education training is somewhat higher or fairly steady compared to alternative certification training. The means for the expert teachers is generally higher for college of education training than for alternative certification training. Figures 15, 16, and 17 illustrate the changes.

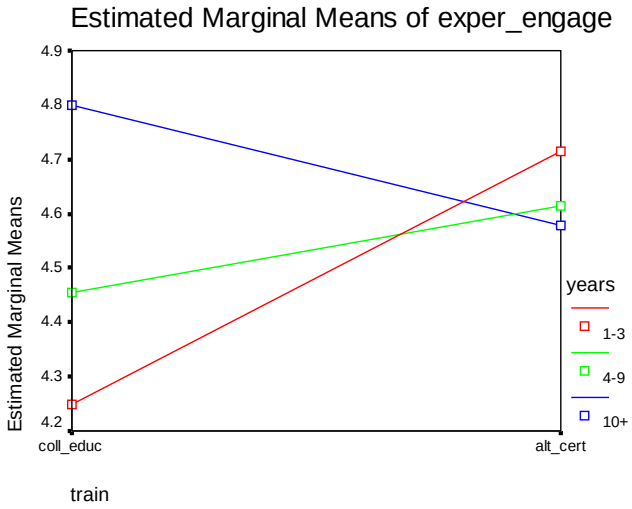

Figure 15

Profile Plot: Item 26

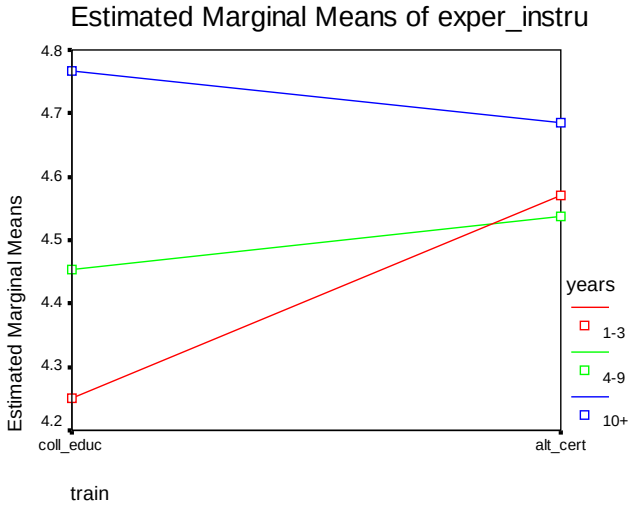

Figure 16

Profile Plot: Item 28

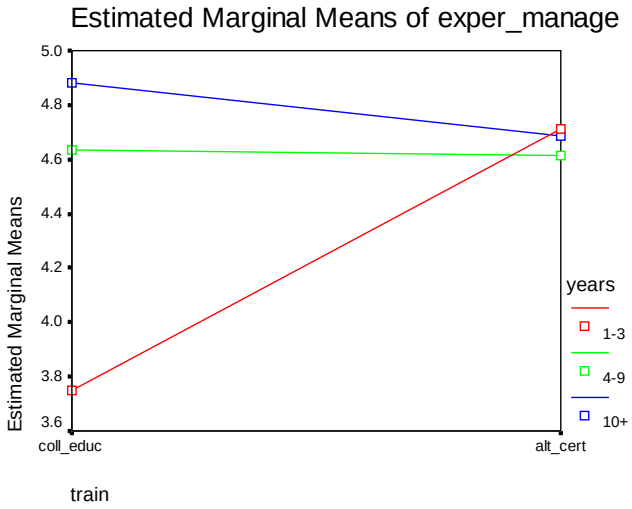

Figure 17

Profile Plot: Item 30

Total Scores

Based on the three known factors exhibited in previous research studies, a total scores analysis was performed for the 24 items on the Teachers' Sense of Efficacy Scale and for the 6 items created specifically for this research study.

The questionnaire that was administered to each of the participants is based on the Teachers' Sense of Efficacy Scale (Tschannen-Moran & Woolfolk Hoy, 2001). The means for the 24 items from the Teachers' Sense of Efficacy Scale are based on a 9-point Likert scale. The higher the value, the more efficacious the teacher feels about that item. For this total scores analysis, the eight items loading on each of the three factors were computed into a total score which would range between 8 and 72 points. These subscales were titled Total Engagement, Total Instruction, and Total Management.

For each of the subgroups, independent *t* tests were conducted to determine if there were any differences between teachers with college of education training and teachers with alternative certification training and between gender groups. ANOVA tests were conducted to determine if there were any differences between novice, experienced, and expert teachers and between racial-ethnic groups. All tests were conducted using an alpha of .05. The null hypothesis for each item on the questionnaire was that there would be no difference in the means between teacher groups, thus, the sample means would be equal. The null hypotheses for the four independent variables can be represented as: $H = \mu_{college} = \mu_{alternative}$; $H = \mu_{novice} = \mu_{experienced} = \mu_{expert}$; $H = \mu_{male} = \mu_{female}$; and $H = \mu_{white} = \mu_{black} = \mu_{hispanic} = \mu_{other}$.

The *t*-tests for type of teacher training for Total Engagement was not statistically significant, $t\ (123) = -.866$, $p = .3886$. Levene's test for equality of variances was met ($F = .001$, $p = .979$). Teachers with alternative certification training ($n = 39$, $M = 51.24$, $SD = 8.705$) expressed higher self-efficacy beliefs than teachers with college of education training ($n = 86$, $M = 49.78$, $SD = 8.695$). The effect size was calculated by η^2 and found to be -.1678, which indicates a large effect size that accounts for approximately 17% of the variance in self-efficacy beliefs can be attributed to type of training.

The test for Total Instruction was not statistically significant, $t\ (123) = -.222$, $p = .824$. Levene's test for equality of variances was met ($F = .035$, $p = .853$). Teachers with alternative certification training ($n = 39$, $M = 59.51$, $SD = 7.026$) expressed higher self-efficacy beliefs than teachers with college of education training ($n = 86$, $M = 59.20$, $SD = 7.242$). The effect size was calculated by η^2 and found to be -.0434, which indicates a fairly small effect size that accounts for approximately 4% of the variance in self-efficacy beliefs can be attributed to type of training.

The test for Total Management was not statistically significant, t (123) = -.280, p = .780. Levene's test for equality of variances was not met (F = 4.708, p = .032) but this does not greatly affect results when items have been combined. Teachers with alternative certification training (n = 39, M = 60.80, SD = 9.347) expressed higher self-efficacy beliefs than teachers with college of education training (n = 86, M = 60.35, SD = 7.673). The effect size was calculated by η^2 and found to be -.0526, which indicates a moderate effect size that accounts for approximately 5% of the variance in self-efficacy beliefs can be attributed to type of training. Table 30 shows the means for the total scores by type of teacher training.

Table 30

Total Score Means: Items 1-24 by Type of Teacher Training

				College of Education		*Alternative Certification*	
Subscale	*t*	*df*	*p*	*M*	*SD*	*M*	*SD*
Total Engagement	-.866	123	.388	49.78	8.695	51.24	8.705
Total Instruction	-.222	123	.824	59.20	7.242	59.51	7.026
Total Management	-.280	123	.780	60.35	7.673	60.80	9.347

The ANOVA test for number of years of teaching experience for Total Engagement was not statistically significant, F = .067, df = 2, 122, p = .935. Levene's test (F = .723, df = 2, 122, p = .487) shows there is homogeneity of groups. Novice teachers (n = 11, M = 50.78, SD = 8.271) expressed higher self-efficacy beliefs than expert teachers (n = 79, M = 50.34, SD = 9.228) or experienced teachers (n = 35, M = 49.82, SD = 7.719). The η^2 (.001) reveals that less than 1% of the variance in self-efficacy beliefs can be accounted for by years of teaching experience. This would indicate a very small effect size.

The test for Total Instruction was not statistically significant, $F = .500$, $df = 2, 122$, $p = .608$. Levene's test ($F = 1.815$, $df = 2, 122$, $p = .167$) shows there is homogeneity of groups. Experienced teachers ($n = 35$, $M = 60.10$, $SD = 6.488$) expressed higher self-efficacy beliefs than expert teachers ($n = 79$, $M = 59.15$, $SD = 7.573$) or novice teachers ($n = 11$, $M = 57.73$, $SD = 6.166$). The η^2 (.008) reveals that less than 1% of the variance in self-efficacy beliefs can be accounted for by years of teaching experience. This would indicate a very small effect size.

The test for Total Management was not statistically significant, $F = .089$, $df = 2, 122$, $p = .915$. Levene's test ($F = .672$, $df = 2, 122$, $p = .513$) shows there is homogeneity of groups. Expert teachers ($n = 79$, $M = 60.71$, $SD = 8.196$) expressed higher self-efficacy beliefs than novice teachers ($n = 11$, $M = 60.45$, $SD = 7.421$) or experienced teachers ($n = 35$, $M = 60.01$, $SD = 8.590$). The η^2 (.001) reveals that less than 1% of the variance in self-efficacy beliefs can be accounted for by years of teaching experience. This would indicate a very small effect size. Table 31 shows the means for the total scores by years of teaching experience.

Table 31

Total Score Means: Items 1-24 by Years of Experience

Subscale		SS	df	MS	F	sig.	η^2
Total Engagement	years	10.311	2	5.156	.067	.935	.001
	error	9352.270	122	76.658			
Total Instruction	years	51.522	2	25.761	.500	.608	.008
	error	6284.831	122	51.515			
Total Management	years	12.094	2	6.047	.089	.915	.001
	error	8317.806	122	68.179			

The *t*-test for gender for Total Engagement was not statistically significant, t (123) = -1.271, p = .206. Levene's test for equality of variances was met (F = .078, p = .781). Female teachers (n = 89, M = 50.86, SD = 8.429) expressed higher self-efficacy beliefs than male teachers (n = 36, M = 48.69, SD = 9.242). The effect size was calculated by η^2 and found to be -.2453, which indicates a very large effect size that accounts for approximately 24% of the variance in self-efficacy beliefs can be attributed to gender.

The test for Total Instruction was not statistically significant, t (123) = -1.908, p = .059. Levene's test for equality of variances was met (F = .013, p = .909). Female teachers (n = 89, M = 60.06, SD = 6.934) expressed higher self-efficacy beliefs than male teachers (n = 36, M = 57.40, SD = 7.413). The effect size was calculated by η^2 and found to be -.3706, which indicates a very large effect size that accounts for approximately 37% of the variance in self-efficacy beliefs can be attributed to gender.

The test for Total Management was not statistically significant, t (123) = -1.543, p = .125. Levene's test for equality of variances was met (F = 3.155, p = .078). Female teachers (n = 89, M = 61.21, SD = 7.613) expressed higher self-efficacy beliefs than male teachers (n = 36, M = 58.72, SD = 9.367). The effect size was calculated by η^2 and found to be -.2917, which indicates a very large effect size that accounts for approximately 29% of the variance in self-efficacy beliefs can be attributed to gender. Table 32 shows the means for the total scores by type of teacher training.

Table 32

Total Score Means: Items 1-24 by Gender

				Male		*Female*	
Subscale	*t*	*df*	*p*	*M*	*SD*	*M*	*SD*
Total Engagement	-1.271	123	.206	48.69	9.242	50.86	8.429
Total Instruction	-1.908	123	.059	57.40	7.413	60.06	6.934
Total Management	-1.543	123	.125	58.72	9.367	61.21	7.613

The ANOVA test for racial-ethnic background for Total Engagement was not statistically significant, $F = .966$, $df = 3, 121$, $p = .411$. Levene's test ($F = .847$, $df = 3, 121$, $p = .471$) shows there is homogeneity of groups. Black teachers ($n = 3$, $M = 56.00$, $SD = 14.177$) expressed higher self-efficacy beliefs than "other" teachers ($n = 5$, $M = 54.80$, $SD = 9.524$), the Hispanic teachers ($n = 5$, $M = 50.40$, $SD = 11.502$), or White teachers ($n = 112$, $M = 49.87$, $SD = 8.409$). The η^2 (.023) reveals that approximately 2% of the variance in self-efficacy beliefs can be accounted for by racial-ethnic background. This would indicate a very small effect size.

The test for Total Instruction was not statistically significant, $F = .323$, $df = 3, 121$, $p = .809$. Levene's test ($F = .783$, $df = 3, 121$, $p = .506$) shows there is homogeneity of groups. Black teachers ($n = 3$, $M = 63.23$, $SD = 10.226$) expressed higher self-efficacy beliefs than Hispanic teachers ($n = 5$, $M = 59.60$, $SD = 6.877$), the White teachers ($n = 112$, $M = 59.20$, $SD = 7.216$), or the "other" teachers ($n = 5$, $M = 58.60$, $SD = 5.117$). The η^2 (.008) reveals that less than 1% of the variance in self-efficacy beliefs can be accounted for by racial-ethnic background. This would indicate a very small effect size.

The test for Total Management was not statistically significant, $F = .448$, $df = 3, 121$, $p = .719$. Levene's test ($F = .566$, $df = 3, 121$, $p = .639$) shows there is homogeneity of groups.

"Other" teachers (n = 5, M = 64.00, SD = 6.892) expressed higher self-efficacy beliefs than Black teachers (n = 3, M = 62.00, SD = 13.229), the White teachers (n = 112, M = 60.39, SD = 8.124), or Hispanic teachers (n = 5, M = 58.40, SD = 9.659). The η^2 (.011) reveals that approximately 1% of the variance in self-efficacy beliefs can be accounted for by racial-ethnic background. This would indicate a very small effect size. Table 33 shows the means for the total scores by racial-ethnic background.

Table 33

Total Score Means: Items 1-24 by Racial-Ethnic Background

Subscale		SS	df	MS	F	sig.	η^2
Total Engagement	racial-ethnic	218.923	3	72.974	.966	.411	.023
	error	9143.658	121	75.567			
Total Instruction	racial-ethnic	50.322	3	16.774	.323	.809	.008
	error	6286.031	121	51.951			
Total Management	racial-ethnic	91.458	3	30.486	.448	.719	.011
	error	8238.442	121	68.086			

Like the initial *t*-tests and ANOVA tests for Items 1 – 24 on the questionnaire, there were no statistically significant differences between the teacher groups. The hypotheses were supported by the Total Scores analysis.

The questionnaire that was administered to each of the participants included 6 items that were created especially for this research study. The pairs of questions asked respondents to determine the effectiveness of their teacher training program and their personal classroom experience. The means for the 6 items are based on a 5-point Likert scale. The higher the value, the more efficacious the teacher feels about that item. For this total scores analysis, the three

items pertaining to teacher training program were computed into a total score called Total Program which would range between 3 and 15 points. The tree items pertaining to personal classroom experience were computed into a total score called Total Experience which would range between 3 and 15 points.

For each of the subgroups, independent *t* tests were conducted to determine if there were any differences between teachers with college of education training and teachers with alternative certification training and between gender groups. ANOVA tests were conducted to determine if there were any differences between novice, experienced, and expert teachers and between racial-ethnic groups. All tests were conducted using an alpha of .05. The null hypothesis for each item on the questionnaire was that there would be no difference in the means between teacher groups, thus, the sample means would be equal. The null hypotheses for the four independent variables can be represented as: $H = \mu_{college} = \mu_{alternative}$; $H = \mu_{novice} = \mu_{experienced} = \mu_{expert}$; $H = \mu_{male} = \mu_{female}$; and $H = \mu_{white} = \mu_{black} = \mu_{hispanic} = \mu_{other}$.

The *t* tests for type of teacher training for Total Program was not statistically significant, $t\ (123) = 1.538$, $p = .127$. Levene's test for equality of variances was met ($F = .327$, $p = .569$). Teachers with college of education training ($n = 86$, $M = 9.55$, $SD = 3.314$) expressed higher self-efficacy beliefs than teachers with alternative certification training ($n = 39$, $M = 8.54$, $SD = 3.619$). The effect size was calculated by η^2 and found to be .1440, which indicates a large effect size that accounts for approximately 14% of the variance in self-efficacy beliefs can be attributed to type of training.

The test for Total Experience was not statistically significant, $t\ (123) = .740$, $p = .461$. Levene's test for equality of variances was met ($F = 1.159$, $p = .284$). Teachers with college of

education training (n = 86, M = 14.12, SD = 1.475) expressed higher self-efficacy beliefs than teachers with alternative certification training (n = 39, M = 13.90, SD = 1.651). The effect size was calculated by η^2 and found to be .0701, which indicates a moderate effect size that accounts for approximately 7% of the variance in self-efficacy beliefs can be attributed to type of training. Table 34 shows the means for the total scores by type of teacher training.

Table 34

Total Score Means: Items 25-30 by Type of Teacher Training

				College of Education		*Alternative Certification*	
Subscale	*t*	*df*	*p*	*M*	*SD*	*M*	*SD*
Total Training Program	1.538	123	.127	9.55	3.314	8.54	3.619
Total Classroom Experience	.740	123	.461	14.12	1.475	13.90	1.651

The ANOVA test for number of years of teaching experience for Total Program was not statistically significant, F = .618, df = 2, 122, p = .541. Levene's test (F = .330, df = 2, 122, p = .719) shows there is homogeneity of groups. Novice teachers (n = 11, M = 10.00, SD = 3.847) expressed higher self-efficacy beliefs than experienced teachers (n = 35, M = 9.55, SD = 3.176) or expert teachers (n = 79, M = 8.99, SD = 3.495). The η^2 (.010) reveals that only 1% of the variance in self-efficacy beliefs can be accounted for by years of teaching experience. This would indicate a very small effect size.

The test for Total Experience revealed a statistically significant, F = 3.934, df = 2, 122, p = .022. Levene's test (F = 7.220, df = 2, 122, p = .001) is statistically significant but is still robust due to combined groups. Expert teachers (n = 79, M = 14.33, SD = 1.217) expressed higher self-efficacy beliefs than experienced teachers (n = 35, M = 13.63, SD = 1.880) or novice

teachers (n = 11, M = 13.36, SD = 1.912). The η^2 (.061) reveals that 6% of the variance in self-efficacy beliefs can be accounted for by years of teaching experience. This would indicate a moderate effect size. Table 35 shows the means for the total scores by years of teaching experience.

Table 35

Total Score Means: Items 25-30 by Years of Experience

Subscale		SS	df	MS	F	sig.	η^2
Total Training Program	years	14.626	2	7.313	.618	.541	.010
	error	1442.939	122	11.836			
Total Classroom Experience	years	17.552	2	8.776	3.934	.022	.061
	error	272.160	122	2.231			

The *t*-test for gender for Total Program was not statistically significant, t (123) = .375, p = .708. Levene's test for equality of variances was met (F = .005, p = .942). Male teachers (n = 36, M = 9.42, SD = 3.392) expressed higher self-efficacy beliefs than female teachers (n = 89, M = 9.16, SD = 3.461). The effect size was calculated by η^2 and found to be .0379, which indicates a fairly small effect size that accounts for approximately 4% of the variance in self-efficacy beliefs can be attributed to gender.

The test for Total Experience was not statistically significant, t (123) = -1.524, p = .130. Levene's test for equality of variances (F = 2.736, p = .101) is statistically significant but is still robust due to combined groups. Female teachers (n = 89, M = 14.18, SD = 1.481) expressed higher self-efficacy beliefs than male teachers (n = 36, M = 13.72, SD = 1.614). The effect size was calculated by η^2 and found to be .1469, which indicates a large effect size that accounts for

approximately 15% of the variance in self-efficacy beliefs can be attributed to gender. Table 36 shows the means for the total scores by type of teacher training.

Table 36

Total Score Means: Items 25-30 by Gender

				Male		*Female*	
Subscale	*t*	*df*	*p*	*M*	*SD*	*M*	*SD*
Total Training Program	.375	123	.708	9.42	3.392	9.16	3.461
Total Classroom Experience	-1.524	123	.130	13.72	1.614	14.18	1.481

The ANOVA test for racial-ethnic background for Total Program was not statistically significant, $F = 1.542$, $df = 3, 121$, $p = .207$. Levene's test ($F = .018$, $df = 3, 121$, $p = .997$) shows there is homogeneity of groups. The "other" teachers ($n = 5$, $M = 11.80$, $SD = 3.421$) expressed higher self-efficacy beliefs than Black teachers ($n = 3$, $M = 11.33$, $SD = 3.215$), the Hispanic teachers ($n = 5$, $M = 10.00$, $SD = 3.742$), or White teachers ($n = 112$, $M = 9.03$, $SD = 3.398$). The η^2 (.037) reveals that nearly 4% of the variance in self-efficacy beliefs can be accounted for by racial-ethnic background. This would indicate a fairly small effect size.

The test for Total Experience was not statistically significant, $F = .546$, $df = 3, 121$, $p = .652$. Levene's test ($F = 2.098$, $df = 3, 121$, $p = .104$) shows there is homogeneity of groups. Black teachers ($n = 3$, $M = 14.67$, $SD = .577$) expressed higher self-efficacy beliefs than "other" teachers ($n = 5$, $M = 14.40$, $SD = .894$), the White teachers ($n = 112$, $M = 14.04$, $SD = 1.533$), or Hispanic teachers ($n = 5$, $M = 13.40$, $SD = 2.302$). The η^2 (.013) reveals that approximately 1% of the variance in self-efficacy beliefs can be accounted for by racial-ethnic background. This would indicate a very small effect size. Table 37 shows the means for the total scores by racial-

ethnic background.

Table 37

Total Score Means: Items 25-30 by Racial-Ethnic Background

Subscale		SS	df	MS	F	sig.	η^2
Total Training Program	racial-ethnic	53.722	3	17.907	1.542	.207	.037
	error	1404.843	121	11.610			
Total Classroom Experience	racial-ethnic	3.869	3	1.290	.546	.652	.013
	error	285.843	121	2.362			

Only one item revealed a statistically significant difference: the number of years of experience with the Total Experience subscale.

The analyses of the *t*-tests and ANOVA tests indicated very little statistical significance for the 125 high school teachers in Brevard County. This final series of tests confirms that there is very little difference between the self-efficacy beliefs of high school teachers regarding their type of training, their years of experience, their gender, or their racial-ethnic background. Thus, the hypotheses were supported by the Total Scores analysis.

CHAPTER FIVE: DISCUSSION AND RECOMMENDATIONS

Traditional wisdom contends that nothing can compete with a 4-year degree in education in order to prepare teachers for competence in the classroom. Further, the standard expectation of most educators is that with classroom experience comes a certain level of efficacy. As the researcher, I have investigated the conceptualization of self-efficacy beliefs from these established perspectives as well as from my own expectations and biases. In my dedication to the integrity of research, I would like to make clear the personal beliefs and professional experiences that have led to this research study.

The researcher's respect for the work of Tschannen-Moran and Woolfolk Hoy (2001; 2007) has influenced the current research study. The purpose of this research study was to identify and describe the differences between (1) the self-efficacy beliefs of teachers from traditional college of education programs and from alternative certification programs in order to identify patterns or correlations between type of training and teachers' sense of efficacy, and (2) the self efficacy beliefs of novice, experienced and expert teachers to determine patterns or correlations between years of experience and teachers' sense of efficacy.

At the inception of this research study, my belief was that there would be a distinct difference in self-efficacy beliefs between teachers who were trained in a college of education program and those who were trained through an alternative certification program. Also, regarding their sense of teacher efficacy, my belief was that novice teachers with three or less years of teaching experience would differ greatly from experienced teachers with four to nine years of teaching experience and from expert teachers with ten or more years of teaching

experience. Having spent the last decade working with beginning teachers, my interest in professional development programs and specific support for beginning teachers has influenced much of my own inquiry and learning. An investigation into the self-efficacy beliefs of high school teachers in Brevard County, Florida, could provide insight to teachers, principals, and district personnel for implementation of professional development opportunities to compensate for weaknesses in teachers' sense of efficacy. By identifying the strengths and weaknesses in teachers' self-efficacy beliefs, appropriate opportunities for professional development and teacher support can be directed to the unique needs of teachers. Existing programs can be modified and new programs can be developed to offer individualized or group support to teachers with low self-efficacy beliefs. In addition, differentiated programs can be generated to address the needs of teachers at various phases of training and teaching experience.

Discussion

Current federal reforms require a highly-qualified teacher in every classroom to promote higher levels of student performance. Policy makers argue that improving teacher quality will do more for student achievement than other school reform measures such as reducing class size and increasing school funding (Darling-Hammond & Youngs, 2002). However, the concept of teacher quality remains both indefinable and intangible (Kennedy, 2006). In an attempt to provide a sufficient and sustainable number of highly qualified teachers in the workforce, alternative certification training programs have come alongside traditional college of education training programs. Proponents of alternative certification programs contend the process of on-the-job training will potentially address the problem of teacher shortages. However, opponents see these programs as an inadequate training process with future ramification for both teachers

and students.

As school districts struggle to fulfill state and federal mandates to have a highly-qualified teacher in every classroom, alternative certification programs are providing a convenient pool of prospective teachers (Tournaki et al., 2009). The alternative certification routes are training the non-education majors who would enter the field of teaching if they could avoid education courses and student-teaching requirements (Guyton et al., 1991). These alternative programs seem promising, but they are generating controversy in both policy circles and colleges of education. Laczko-Kerr and Berliner (2003) warn that schools are hiring undercertified teachers at the same time as they are struggling to increase student performance.

Perhaps alternative certification programs are not contributing to successful teaching practices. Perhaps they are. Whether or not teachers with alternative certification are less capable or equally capable than their counterparts with college of education training, there could be serious repercussions in the quest for placing a highly qualified teacher in each classroom. Both administrators and teachers need to understand how the traditional college of education training or alternative certification training of individual teachers can have a direct impact on beginning teachers and their effectiveness in the classroom. The problem, therefore, lies in the current controversy in teacher preparation as distinct division between teachers from traditional college of education programs and from alternative certification pathways.

The need to place a highly-qualified teacher in every classroom – and the procedure for doing so – is indeed problematic. There is a substantial body of research that indicates a teacher's self efficacy beliefs can be an indicator of his or her performance in the classroom. There is evidence that demonstrates a relationship between teachers' beliefs about their personal

ability to affect students' achievement and the outcomes of both the teachers' and the students' efforts (Tschannen-Moran & Woolfolk Hoy, 2007). By identifying strengths and weaknesses in self-efficacy beliefs, it is possible to provide interventions such as professional development or peer mentoring to increase an individual teacher's sense of efficacy, which could then improve his or her teaching performance, and ultimately improve student achievement.

The Teachers' Sense of Efficacy Scale created by Tschannen-Moran and Woolfolk Hoy (2001) was administered to the random sample of high school teachers in the current research study with the anticipation that the results of their responses would resemble the results in the repeated use of the Scale with other teachers. In addition to the 24 items consistently used to measure self-efficacy beliefs, six researcher-designed items were included to determine teachers' perspective on their teacher training program and their personal classroom experience. (See Figure1 and Figure 2 for the questionnaire items.) The six additional items were based on the three factors commonly exhibited in the Scale: Efficacy for Student Engagement, Efficacy for Instruction Strategies, and Efficacy for Classroom Management. Both a factor analysis and a reliability analysis were conducted to ensure the instrument administered to the sample of 125 Brevard County high school teachers was comparable to the established scale.

The first factor analysis provided four factor loadings instead of three. All of the items that correspond with Tschannen-Moran and Woolfolk Hoy's factor called Efficacy for Classroom Management loaded on the first factor in the current analysis. Instead of the eight items identified in previous research studies, nine items loaded on the factor called Efficacy for Student Engagement. Two items – variety of assessments and gauge comprehension – loaded with the items on the Engagement factor rather than the Instructional factor as expected. Instead

of eight items loading on the third factor as anticipated, four items loaded on a third factor and three items loaded on a fourth factor. Six of the items that loaded on the last two factors traditionally load on Tschannen-Moran and Woolfolk Hoy's factor called Efficacy for Instructional Strategies. One item – assist families – loaded with the items corresponding to Instructional Strategies rather than the expected Engagement factor. Overall, 21 of the 24 items loaded with the items with which they are most frequently associated. (See Table 8 for an illustration of the item loadings for the current research study and for previous studies.)

The three items that did not load as expected were "How much can you gauge student comprehension of what you have taught?", "How much can you use a variety of assessment strategies?", and "How much can you assist families in helping their children do well in school?" It is feasible that these three items could actually be associated with *either* the factor of Student Engagement *or* the factor of Instructional Strategies. Student comprehension is dependent upon both the student's level of engagement and upon the teacher's instructional strategies. Using a variety of assessments is a successful instructional strategy and can lead to greater levels of engagement. Assisting families to motivate their children will have an impact on engagement in the instructional strategies. Therefore, although these three items did not load on the factors traditionally found in previous research studies, it does not seem unduly problematic in the current research study.

However, a further factor analysis was undertaken in an attempt to reconcile the third and fourth factors found in this research study. Tschannen-Moran and Woolfolk Hoy (2001) have repeatedly used both the 24 item Teachers' Sense of Efficacy Scale and a 12 item Scale they refer to as the short form. A second factor analysis was conducted utilizing only the 12 items on

the short form. This factor analysis resulted in the three established factors. Four items loaded on factor 1, Classroom Management; five items loaded on factor 2, Instructional Strategies; and three items loaded on factor 3, Student Engagement. Once again, "How much can you assist families in helping their children do well in school?" did not load as predicted. The teachers' Sense of Efficacy Scale has been used at various educational levels. Perhaps high school teachers do not feel as efficacious working with families as elementary and middle school teachers since older students are usually more independent and self-sufficient than young children.

One of the reasons for the careful investigation of the factor loadings was to determine whether or not the high school teachers in Brevard County are similar to other teachers who have responded to the Teachers' Sense of Efficacy Scale. It seems that there is a great deal of consistency between the results of the current research study and the results of previous studies. A second reason was to justify the creation and use of the six items which were created specifically for this study and make up the second section of the questionnaire. These six paired items ask participants to determine the level of preparation they received in their training program that enables them to effectively engage students, to effectively implement instructional strategies, and to effectively manage their classroom and their students. The factor analysis lends credence to the use of these questions. A third reason was to supplement the reliability analysis of the questionnaire instrument.

Through repeated administrations of the Teachers' Sense of Efficacy Scale, Tschannen-Moran and Woolfolk Hoy (2001) have established a very high reliability rating for the instrument and the three subscales. The reliability analysis of the participants' responses in the current research study also show a very high reliability rating. The alpha coefficient of .93 for the

total instrument in this research study is very consistent with the alpha reliability of .94 for the total instrument in previous studies. The alpha coefficients of .87 for Engagement and .89 for Management for the current study are similar to the alpha coefficients of .87 and .90 for previous studies. However, the alpha coefficient of .83 for Instruction in the current study is lower than the alpha coefficient of .91 in previous studies. The results of the reliability analysis of both the total instrument and the three subscales indicate very high reliability ratings. Therefore, it is probable that the results of the *t*-tests and analysis of variance tests have provided credible data.

The earliest alternative certification programs were begun in New Jersey and Texas in the early 1980s (Stafford & Shaughnessy, 2006). The purpose of the programs was to train a teaching force for the hard-to-staff urban school districts. Presently, alternative certification programs provide on-the-job training for non-education majors and career-changers. At the onset of this research study, the researcher believed that there would be only a handful of teachers at each high school with alternative certification and that their "non-traditional" training would have left them feeling frustrated and underprepared. The study revealed more than half of the novice teachers have alternative certification training, about one-third of the experienced teachers have alternative certification training, and nearly one-fourth of the expert teachers have alternative certification training. Further, since there are no statistically significant differences between the groups, the teachers with alternative certification training perceive themselves to be as efficacious as their peers. It is interesting to note that Brevard County is not an urban district, yet the proportion of the teaching force with alternative certification training is considerable. In all, nearly one-third of the teachers from the random sample have alternative certification training.

Schulman provides a unique description of beginning teachers: the expert learner becomes a novice teacher (in Bransford et al., 2000). Novice teachers have a wealth of information from their training, but they also have a vast memory of their own teachers and classroom settings in which they learned. These memories play a crucial role in how novice teachers set up their own classrooms and how they create and develop their own teaching persona (Featherstone, 1993). At the initiation of this research study, the researcher believed that novice teachers would express feelings of uncertainty and admit to weaknesses in their knowledge-base which would lead them to feel hesitant and insecure. The study revealed the number of novice teachers is less than ten percent of the random sample and the number of expert teachers is more than two-thirds of the sample. Further, the self-efficacy beliefs of the novice teachers are quite similar to the self-efficacy beliefs of the experienced and expert teachers since there were no statistically significant differences in the groups.

Overall, the high school teachers in Brevard County perceive themselves to be efficacious in their day-to-day teaching. The range of means for the combined responses of all participants fell between 5.63 and 8.18 on a 9-point continuum. The two lowest means for responses were “How much can you assist families in helping their children do well in school?” (M = 5.63) and “How much can you do to motivate students who show low interest in school work?” (M = 5.67). These responses centered on the descriptor “Some Influence.” Both items load on the Efficacy for Student Engagement factor. The two highest means for responses were “To what extent can you make expectations clear about student behavior?” (M = 8.18) and “How well can you establish routines to keep activities running smoothly?” (M = 8.04). These responses centered on the descriptor “Quite a Bit.” Both items load on the Efficacy for

Classroom Management factor. Although it goes against conventional wisdom, the area of classroom management proved to be the most efficacious for the teachers, not the most difficult or worrisome. (See Table 19 for an illustration of the differences in factor loadings for all 24 items.)

The Brevard County high school teachers feel much more efficacious concerning their personal classroom experience rather than their teacher training program. Items 25, 27, and 29 referring to teacher training programs revealed a range of means for the combined responses of all participants between 2.90 and 3.28 on a 5-point continuum. These responses clustered around the descriptor "Some Influence." Items 26, 28, and 30 referring to personal classroom experience revealed a range of means for the combined responses of all participants between 4.65 and 4.74. These responses approached the descriptor "A Great Deal." (See Table 25 for an illustration of the differences in factor loadings for the 6 items.)

The researcher anticipated that the teachers with college of education training would perceive themselves to be more efficacious than the teachers with alternative certification training because they would have more extensive training prior to entering the classroom setting. However, the data did not support that assumption. Only eight of the 24 items on the Teachers' Sense of Efficacy Scale indicated that teachers with college of education training had higher levels of self-efficacy. Two of those items loaded on the Efficacy for Student Engagement factor, four loaded on the Efficacy for Instructional Strategies factor, and two loaded on the Efficacy for Classroom Management factor. Participant #33's college of education training was beneficial: "I feel like my teacher training gave me the concrete preparation for my job but it did not, nor could it have, given me the intangibles to effectively engage students. Therefore, I work everyday to

get better at that task." Sixteen of the 24 items indicated teachers with alternative certification training had higher levels of self-efficacy. Six of those items loaded on the Efficacy for Student Engagement factor, four loaded on the Efficacy for Instructional Strategies factor, and six loaded on the Efficacy for Classroom Management factor. Participant #100 comments on alternative certification training: "Nothing beats experience, and trial and error. More experience gives you a chance to try out lessons, keep what works, and discard or 'revamp' what doesn't work." The teachers with alternative certification training reported higher self-efficacy beliefs more frequently than the teachers with college of education training, but there does not seem to be a discernable pattern when looking at the three factors.

Additionally, for the six items focusing on Student Engagement, Instructional Strategies, and Classroom Management, the researcher anticipated that the teachers with college of education training would perceive themselves to be more efficacious than the teachers with alternative certification training. The data supported that expectation because teachers with college of education training had higher levels of self-efficacy than those with alternative certification training, although the differences were not statistically significant.

The researcher also anticipated that the experienced teachers with four to six years of teaching experience and expert teachers with ten or more years of teaching experience would perceive themselves to be more efficacious than the novice teachers with only three or less years of teaching experience because they would have spent more time in a classroom setting. However, the data did not support that assumption. Of the 24 items on the Teachers' Sense of Efficacy Scale, only eleven indicated that experienced teachers had higher levels of self-efficacy. Three of those items loaded on the Efficacy for Student Engagement factor, six loaded on the

Efficacy for Instructional Strategies factor, and two loaded on the Efficacy for Classroom Management factor. An experienced teacher, Participant #69 commented: "The strategies learned were great but in the classroom adjustments have to be made." Six of the 24 items indicated expert teachers had higher levels of self-efficacy. One of those items loaded on the Efficacy for Student Engagement factor, one loaded on the Efficacy for Instructional Strategies factor, and four loaded on the Efficacy for Classroom Management factor. An expert teacher, participant #91 commented: "I don't think any training can prepare an individual for what they will experience in a classroom and those experiences vary from region to region (even neighborhood to neighborhood)." Seven of the 24 items indicated novice teachers had higher levels of self-efficacy. Four of those items loaded on the Efficacy for Student Engagement factor, one loaded on the Efficacy for Instructional Strategies factor, and two loaded on the Efficacy for Classroom Management factor. A novice teacher, Participant #98 commented: "I learned more from reading books like Harry Wong's *The First Days of School* and Todd Whitaker's *What Great Teachers Do Differently*." The experienced teachers reported higher self-efficacy beliefs more frequently than the expert teachers or novice teachers. The novice teachers seem to feel most efficacious with the items in the Efficacy for Student Engagement factor, the experienced teachers seem to feel most efficacious with items in the Efficacy for Instructional Strategies factor, and the expert teachers seem to feel most efficacious with the items in the Classroom Management factor.

In addition, for the six items focusing on Student Engagement, Instructional Strategies, and Classroom Management, the researcher also anticipated that the experienced teachers with four to six years of teaching experience and expert teachers with ten or more years of teaching experience would perceive themselves to be more efficacious than the novice teachers with only

three or less years of teaching. Again, the assumption was not supported by the data. Items 25, 27, and 29 referring to teacher training program indicated that experienced teachers felt more efficacious in engaging students while novice teachers felt more efficacious in instructional strategies and classroom management. Items 26, 28, and 30 referring to personal classroom experience indicated that expert teachers felt more efficacious in all three factors than the novice or experienced teachers. Therefore, novice and experienced teachers had higher regard for their training programs, whereas expert teachers had higher regard for their own classroom experience.

While analyzing the six items related to teacher training and classroom experience, the researcher noted that there was a considerable – although not statistically significant – difference in the pattern of responses for preparedness due to teacher training program and preparedness due to personal classroom experience. For each pair of questions, the responses for teacher training program indicated normal, bimodal, or relatively flat distributions, while the responses for personal classroom experience indicated a markedly skewed distribution. (See Figures 6, 8, and 10.) The indicators for teacher training programs were spread across the range of responses from "very little" to "some influence" to "a great deal." Participant #25 responded on the low end of the range: "I have learned far more from trial and error about how to get my students interested in learning than most things that I learned through my training." On the other hand, Participant #120 responded on the high end of the range: "My training allowed me to cultivate ideas to implement in my classroom. Being with other teachers-in-training provided a brainstorm of ideas that I probably would not have been able to come up with on my own. It provided, in a way, a network for implementation."

In contrast, the indicators for personal classroom experience were greatly skewed toward the response of "a great deal." (See Figures 7, 9, and 11.) Participant #55 wrote: "Almost everything I have learned has been through being in the classroom." If the skewed pattern of responses had been arbitrary or unique to one pair of items, there might be no reason for concern. However, the striking consistency of the pattern requires attention. Obviously, teachers with differing training programs and differing years of experience strongly agree that their personal classroom experience is much more relevant than their training program.

In sum, while there were no statistically significant differences between teachers with college of education training and teachers with alternative certification training, or between teachers with less than three years of experience, those with four to nine years of experience, or those with more than ten years of experience, there are differences with practical significance. It seems that alternative certification teachers perceive themselves to be more efficacious regarding more of the questionnaire items than do the college of education teachers. Also, novice teachers perceive themselves to be just as efficacious in their teaching practices as the experienced and expert teachers. Thus, the conventional wisdom that often drives professional development, teacher support programs, and even teacher placement in Brevard County high schools should be reviewed within the context of the data and participants' comments from the current research study.

Based on the results from the current research study, it may be of practical significance for school-level and district-level personal to look carefully at the differences in teachers' perceptions about their training programs and their classroom teaching experience. It might be advantageous to allow expert teachers with higher self-efficacy beliefs related to classroom

management to work with those teachers whose self-efficacy beliefs are not as strong. A corollary benefit might be that the teachers with higher self-efficacy beliefs in student engagement and instructional strategies could share practices and knowledge with teachers who are more far-removed from their training and have, perhaps, had less opportunity to experience many of the newer practices and procedures that have proven to be effective in the classrooms of the novice and experienced teachers.

The 2007 study by Tschannen-Moran and Woolfolk Hoy addressed the self-efficacy beliefs of novice and career teachers. They found statistically significant differences for the overall scale of 24 items, the Instructional Strategies subscale, and the Classroom Management subscale. There were no statistically significant differences on the Student Engagement subscale. In light of Tschannen-Moran and Woolfolk Hoy's findings that beginning teachers reported lower levels of self-efficacy than their peers, the researcher anticipated that both alternative certification trained teachers and novice teachers in Brevard County would report lower levels of self-efficacy than their peers. An in-depth analysis of the responses to the questionnaire did not confirm this expectation. None of the 24 items on the Teachers' Sense of Efficacy Scale indicated a statistically significant difference for the variables of type of training program or years of experience. Once again, traditional perceptions about lack of experience and lack of preparation were not borne out in the results of the analyses.

One possible explanation for the failure to reach statistically significant differences in the type of training and years of experience variables is that there simply are not distinct differences. Although contrary to the researcher's expectations and conventional wisdom, alternative certification teachers perceived themselves to be efficacious in the classroom. How is it that

teachers with limited training feel efficacious in the classroom? Research has shown that determining the differences between teachers with college of education background and teachers from alternative certification training programs has become progressively more difficult (Tournaki et al., 2009). Perhaps it is because teachers with alternative certification training are immersed in a program that provides on-the-job training which generally includes a mentor and extended professional development within the first few years of inservice teaching, whereas teachers with college of education training are usually assumed to be sufficiently trained and prepared so they have fewer contacts and resources available to them in their early years of teaching. Possibly it is because teachers with alternative certification training are experts in their field of study and this self-assurance extends to their perceptions of self-efficacy in their classroom behaviors. Many teachers who enter the schools with alternative certification training have spent years in the work force and have gained maturity and confidence that translates into teacher efficacy. They may also have past experiences to draw on such as volunteer work with children and adolescents or staff development and leadership roles in their previous career.

Contrary to the researcher's expectations and conventional wisdom, novice teachers perceived themselves to be efficacious in the classroom. Research shows that novice teachers are often in survival mode and are preoccupied with their own behaviors (Parsons & Fuller, 1974; Richardson & Placier, 2001). Why do novice teachers feel as successful as their more experienced peers? Perhaps it is because novice teachers' perceptions are focused on their own behaviors and, thus, they are not as consciously aware of their impact on students as their experienced and expert peers would be. Possibly it is because novice teachers often bring innovative practices and a fresh outlook to the classroom, whereas teachers with more years in

the classroom are further removed from their studies and may have grown accustomed to traditional approaches. Also, novices usually enter teaching with high expectations and great enthusiasm. They find both student feedback and encouragement from peers to be a potent source for increasing self efficacy (Woolfolk Hoy & Burke-Spero, 2005).

Another possible explanation for the failure to reach statistically significant differences in the variables of type of teacher training and years of experience is the over-representation of some groups which could possibly have skewed the results. From the group of 125 participants, 86 teachers had college of education training while only 39 had alternative certification training. There were 79 expert teachers with ten or more years of experience, 35 experienced teachers with four to nine years, and only 11 novice teachers with three or less years. There were 89 female teachers and 36 male teachers. There were 112 White teachers, but only 3 Black teachers, 5 Hispanic teachers, 2 teachers who were American Indian/Pacific Islander or multi-racial, and 3 teachers who did not identify their racial-ethnic background. Since the sample of high school teachers consists predominately of college of education trained, expert in years of experience, White female teachers, it is possible that the results of the analysis of the current research study might be somewhat skewed.

The results from this research study are in strong contrast to the results found in the extensive research of Tschannen-Moran and Woolfolk Hoy (2001; 2007) and from Wheatley (2005) which consistently show no relationship between self-efficacy beliefs and gender. While there were statistically significant differences in responses from female and male teachers in the Brevard County random sample, the researcher considers that these differences arise more from the unequal size of the groups than from true differences in the self-efficacy beliefs of these

teachers. Although there were 89 females and only 36 males in the sample group, this is fairly consistent with the total population of high school teachers in Brevard County. The same conclusions can be drawn concerning the racial-ethnic groups in the random sample. The groups were extremely uneven with 112 White teachers, 3 Black teachers, 5 Hispanic teachers, 1 American Indian/Pacific Islander teacher, 1 multiracial teacher, and 3 teachers who did not identify their racial-ethnic background, but this is fairly consistent with the total population of high school teachers in Brevard County. Since the distribution of the sample closely matches the distribution of the population, the researcher is confident that the demographic variables are not directly influential on the participants' self-efficacy beliefs. (See Table 5 for a comparison of demographic variables.)

Because of the unequal size groups and the insistence by previous researchers that there is no relationship, gender and racial-ethnic background was not used in the in-depth analysis of the responses from the questionnaire.

After the *t*-tests and ANOVA tests failed to reveal statistically significant results in any systematic pattern, a factorial analysis was conducted to identify any interaction effects between the type of training and years of experience variables. An interaction analysis of the 24 items on the Teachers' Sense of Efficacy Scale and the six items specifically created for this study indicated statistically significant results for only six of the sixty tests. The statistically significant items include: an interaction effect between training and years of experience for Item 2 "How much can you do to help your students think critically?", both teacher training and the interaction effect between variables for Item 6 "How much can you do to get students to believe they can do well in school work?", teacher training for Item 27 "How well did your teacher training prepare

you to effectively implement instructional strategies?", and both years of experience and an interaction between variables for Item 30 "How well has your personal classroom experience prepared you to effectively manage your classroom and your students?" Once again, there is no discernable pattern in the results for the interaction effects. There seems to be little difference in the overall self-efficacy beliefs of the teachers in the current research study.

There was, however, a noticeable pattern in the profile plots for the six paired items. For Items 25, 27, and 29 relating to preparedness based on teacher training program, the profile plots illustrate higher means for college of education trained teachers than for alternative certification trained teachers. It seems that for teachers from all experience levels, those with college of education training place a higher value on their training than those with alternative certification training. Conversely, the profile plots for Items 26, 28, and 30 relating to preparedness based on personal classroom experience show a much more dynamic pattern. The novice teachers feel well-prepared based on their alternative certification training, the experienced teachers exhibit little fluctuation between types of training, and the expert teachers feel well-prepared based on their college of education training.

It is worth noting that more novice teachers had alternative certification training (n = 7) than college of education training (n = 4) and that more expert teachers had college of education training (n = 60) than alternative certification training (n = 19). As such, the pattern of interaction may be due to either the number of teachers in each training program or to an actual interaction effect. This finding may relate to the recent trend in increasing numbers of participants in alternative certification programs. For beginning teachers entering the classroom in Brevard County, 64% (7 of 11) are completing alternative certification training while only

36% (4 of 11) have come from traditional college of education training. On the other hand, for established teachers, 76% (60 of 79) came from traditional college of education training while only 24% (19 of 79) have alternative certification training.

The trend towards alternative certification training is already evident nationally. The same tendency is also emerging for the beginning teachers in Brevard County. As this pattern continues to develop throughout the nation, attention to the needs of beginning teachers from various training programs need to remain a priority. Knowledge of the strengths and weaknesses of the diverse groups of beginning teachers is essential in order to provide continued training and support to help them become highly qualified.

Based on the results of this study, the self-efficacy beliefs of teachers with alternative certification training are equivalent to those teachers with college of education training. Further, the self-efficacy beliefs of novice teachers are equivalent to both experienced and expert teachers. Therefore, it can be concluded with some level of confidence that the programs in place in Brevard County for beginning teachers are effectively training and supporting the teacher candidates and providing them with the knowledge and skills they need to feel efficacious in their day-to-day teaching activities.

Recommendations

As the preeminent researchers in the area of teacher self efficacy, Tschannen-Moran and Woolfolk Hoy (2001) define self efficacy as "a future-oriented belief about the level of competence a person expects he or she will display in a given situation" (p. 787). However, Schunk and Pajares (2005) insist that no amount of competency, ability, or effort will produce a successful performance unless a person has the requisite knowledge and skills. Obviously, self-

efficacy beliefs are dependent upon what a person knows, as well as what he or she is willing to attempt. Ability and effort must go hand in hand. But are they equally important, or is one more critical than the other? Participant #71's comment is perceptive: "Real world work and training is more effective than teaching programs in colleges. Understanding the content is most important, as is caring about what you're teaching. Too much emphasis is placed on 'teaching strategies' and not enough is placed on real knowledge. Educational theory is just that – someone's idea of what works, not real research on what actually goes on in the classroom, and what students need to KNOW in order to be successful." The dichotomy of training versus experience is evident. "Real world work" is necessary to the teacher's success, yet an emphasis on content and "real knowledge" is essential for teachers and students.

The results of the analyses conducted on the responses of the 125 high school teachers clearly point to classroom experience as the most important factor in their beliefs about their own self-efficacy. Based in social cognitive theory, mastery experiences are the most powerful source of efficacy information (Goddard et al., 2004). The responses to both the questionnaire items and the comments indicate overwhelmingly – even though not statistically significantly – that there are differences in the teachers' perceptions of their training programs and their classroom experience. The teachers in the current research study believe personal classroom experience is *necessary*. And contrary to expectations, they seem to believe efficacious teaching experience might also be *sufficient*. Many of the comments from participants discounted their training. It seems highly unlike, though, that teacher training is *unnecessary*. Why then is there such a marked bias toward personal experience and against training programs?

The effort that an individual expends on a particular activity or task is generally

determined by his or her perceived level of efficacy; as such, individuals generally choose tasks in which they feel skilled and confident. Thus, they perform tasks in which they feel efficacious. Teachers, therefore, rely on their personal sense of efficacy when planning lessons and delivering instruction. They would, of course, choose curriculum and strategies with which they are familiar and have had previous success. Teachers with a high sense of personal efficacy most often have students who are engaged and show greater achievement (Dembo & Gibson, 1985). Consequently, teachers with strong self-efficacy beliefs are essential to an educational system in need of highly qualified teachers.

But what happens when a teacher encounters new procedures, challenging curriculum, and difficult students? According to Bandura's (1977) theory of self-efficacy, how much effort an individual dedicates to a task, how long his or she will persevere in the face of difficulty, and how resilient he or she will be after a failure is dependent upon his or her personal efficacy beliefs. As a result, a teacher with a high level of self-efficacy is likely to persist longer at a particular task which will lead to increased performance which will then raise his or her sense of efficacy. On the other hand, a teacher with a low level of self-efficacy is likely to give up more quickly which often leads to failure which then lowers his or her confidence.

Tschannen-Moran and Woolfolk Hoy (2007) connect teachers' self-efficacy beliefs to Bandura's self-efficacy theory through the teachers' effort, persistence, and resilience. They contend it is possible to make an informed inference about a teacher's performance in the classroom based on his or her expressed beliefs about self-efficacy. By identifying the strengths and weaknesses in self-efficacy beliefs of various groups of teachers, it would be possible to provide interventions such as professional development or peer mentoring to increase an

individual teacher's sense of efficacy, which could then improve his or her teaching performance, and ultimately improve student achievement. This perspective on teachers' self efficacy and the potential to improve both teaching and learning has been the driving force for the current research study.

As previously stated, the purpose of this research study was to investigate the self-efficacy beliefs of teachers from different types of teacher training programs and with various levels of classroom teaching experience. The researcher hypothesized that teachers with alternative certification training and novice teachers would report lower levels of self-efficacy beliefs due to their limited training and experience, while teachers with college of education training and experienced and expert teachers would report higher levels of self-efficacy beliefs based on more comprehensive training and extended time in the classroom.

An in-depth analysis of the responses from 125 high school teachers in Brevard County, Florida, indicated there was very little difference in teachers' sense of efficacy based on type of teacher training or on years of teaching experience. Independent *t*-tests and analysis of variance tests did not indicate statistically significant differences between groups of teachers. Therefore, it can be assumed with reasonable confidence that teachers with diverse types of teacher training and with various years of teaching experience perceive themselves to be equally efficacious to their peers.

The results of the current research study may provide new insights into current training procedures. While it was anticipated that college of education training programs would offer a more advantageous start in the classroom, there is little evidence that this is so. It is possible – even probable – that a review of current teacher training programs in colleges of education could

present teacher educators with alternate and additional methods that could enhance beginning teachers' knowledge and skills, and in turn, improve their teaching performance and the achievement of their students. Darling-Hammond and Haselkorn (2009) suggest that a synthesis of both college of education programs and alternative education programs might produce the highly qualified teachers required by NCLB. The following recommendation is offered by the present researcher as a potential solution to the dissatisfaction with training programs and insistence on personal classroom experience as evinced by the sample of 125 high school teachers in Brevard County.

Instead of a series of seemingly unrelated and irrelevant courses, early field experiences could simulate the on-the-job practices of alternative certification programs. Borko & Putnam (1996) suggest that because of their prior beliefs, prospective teachers may not see the relevance of their pedagogy courses to the process of learning to teach, and they may not attend closely to the information or experiences offered by these courses. For the majority of prospective and practicing teachers, beliefs about how to teach and how to be a student are firmly engrained because of their "apprenticeship of observation" (Pajares, 1992). Teachers have spent their adolescence in school watching teaching and learning take place. Their own learning-to-teach experiences are colored by these previous impressions. It shouldn't be surprising, therefore, that the teachers in this research study are biased toward personal experience. Participant #123 believes college courses can be helpful: "This was one of two useful classes. The instructor was a classroom teacher, so the class was practical, useful, and relevant." On the other hand, Participant #47 believes college classes are lacking: "All I heard were the horror stories and how tough-minded a teacher had to be. It is one thing to read about classroom management and

another to actually implement it." The common thread in both comments is knowledge tempered by relevance.

Conceivably a synthesis of training and experience can be attained by a series of half-day internships that run concurrently with college of education courses. Subject area coursework and content methodology classes could be scheduled in the first semester of the junior year. The second semester of the junior year could consist of a half-day internship to provide hands-on field experience in combination with coursework in the evening focusing on classroom management. The evening sessions would provide at-the-right-time instruction since most preservice teachers believe their first and most immediate need is classroom management. It would also allow time for peer feedback, advice from the professor, and time for reflection.

The first semester of the senior year could provide another half-day internship concurrent with a class on instructional strategies and a class on learning theories. This second internship could be at a different grade level or with a different academic level of students. Thus, the preservice teacher would have teaching experience with a variety of students. By this time, the main focus would be on student achievement because worries and issues about behavior and classroom management would be less pressing. Peer interaction during the evening sessions could provide the teachers with opportunities to mini-teach and share resources and best practices.

The second semester of the senior year could offer a third half-time internship with classes in the evening which focus on curriculum development and on broader issues such as equity and multicultural education. The internship could involve yet another grade level or academic level, or the preservice teacher could intentionally specialize in a particular area. By

this time, the preservice teacher is more aware of the nuances of the classroom and the diversity of his or her students. As such, more theoretical coursework would seem relevant for at-the-right-time learning.

Research has shown that self-efficacy beliefs are developed over time and with multiple experiences. The numerous half-time internships could give preservice teachers enough time and opportunity to develop their skills and their confidence. Since efficacy beliefs are most pliable during the early stages of learning, it is crucial to provide chances for success early in a teachers' training (Tschannen-Moran & Woolfolk Hoy, 2007). Participant #65 was frustrated with the internship program: "When I student taught, most of the management was handled by the cooperating teacher at the beginning of the year. I think this is true in general and one of the reasons the first few years are so hard." Participating in a sustained training program with extended time and opportunity to feel success could alleviate some of the fear and frustration of the early years in the classroom. Participant #30 praises hands-on experience and mentoring: "Nothing will prepare you for the classroom like being in a classroom. Mentoring in the school for novice teachers is vital." Once a teacher is placed in the classroom, there must be a support program in place that continues the peer feedback relationship and time for reflection developed during the last two years of coursework.

Just as a revised college of education program could better prepare teachers and enhance their sense of teaching efficacy, a reconsideration of current practices in alternative certification training is recommended. The procedure of concomitant teaching and evening sessions with peers can be embedded into alternative certification programs. Although there is very little extra time in the busy schedule of beginning teachers, a weekly or bi-weekly meeting with peers could

prove invaluable. Time to give and receive feedback with peers, time to share resources and best practices, and time to reflect are vital.

The necessity of placing highly-qualified teachers in every classroom is fraught with challenges. Further, the debate centering on which form of teacher training is most effective will probably not be settled in the near future. In the mean time, an awareness of how teachers regard their own efficacy in the classroom and how they regard their own teacher training programs and personal classroom experiences may offer a new understanding to teacher educators, to district professional development leaders, and to school administrators. There is a substantial body of research that indicates a teacher's self efficacy beliefs can be an indicator of his or her performance in the classroom. By identifying strengths and weaknesses in self efficacy beliefs, interventions such as professional development or peer mentoring can be provided to increase an individual's sense of efficacy, which could then improve his or her teaching performance, and ultimately improve student achievement.

Future Research

Although the Teachers' Sense of Efficacy Scale has been used in many states and at a variety of educational sites and instructional levels, too little attention has been devoted to the self-efficacy beliefs of novice teachers. Also, to this researcher's knowledge, there are no other studies addressing the self-efficacy beliefs of teachers with alternative certification training. Further investigation into both teacher groups could provide fruitful evidence to extend the body of research involving teachers' perceptions of their self-efficacy in the classroom.

The current research study focused on the self-efficacy beliefs high school teachers in Brevard County, Florida. As such, there is very little generalizability for these results. For a more

complete representation of the self-efficacy beliefs of all teachers in Brevard County, it would be beneficial to administer the Teacher's Sense of Efficacy Scale to both the middle school teachers and elementary school teachers. The overall results could provide insight into the professional development needs of teachers at each school level, the professional development needs of teachers by type of training program, and the professional development needs of teachers according to their years of teaching experience. It is paramount to provide professional development early in a teachers' career, since beliefs become stable and it is difficult to initiate changes in beliefs or behavior in experienced teachers (Tschannen-Moran et al., 1998).

Although the 44% response rate attained in the current research study is respectable, a change in procedures could produce a greater response rate for future administrations of the Teachers' Sense of Efficacy Scale. Instead of email contact and use of SurveyMonkey software, face-to-face sessions between the researcher and potential participants is advisable. Also, a second group of randomly selected participants could be contacted and administered the instrument to increase the number of participants and, thus, increase the overall response rate.

Since Brevard County is a middle-sized school district with a disproportionate number of White teachers, it would be useful to administer the Teachers' Sense of Efficacy Scale to teachers from other school districts. It would be meaningful to determine whether there are differences between teachers in middle-sized counties compared to smaller districts and larger districts. Also, it would be productive to determine whether there are differences between teachers in a district with a majority of White teachers compared to those in a district with a majority of Black teachers (for example, Orange County in Orlando) or those in a district with a majority of Hispanic teachers (for example, Dade County in Miami). The results of the current

research study involving high school teachers are also not generalizable in other states. Administering the Teachers' Sense of Efficacy Scale to teachers in each of the geographical regions and in various socio-economic areas could provide useful comparisons of teacher groups.

Finally, although it is valuable to understand teachers' sense of efficacy in their day-to-day teaching, there is a distinct difference between how efficacious teachers feel and how efficacious they actually are in their practice. Tschannen-Moran, Woolfolk Hoy and Hoy (1998) emphasize that self-efficacy drives an individual's *perception* of competency rather than his or her *actual* level of competency. Bandura (1977) contends that mastery experiences are the most authentic source of power behind self-efficacy beliefs because they represent actual success that is personally accomplished and, therefore, more meaningful and more lasting.

In an attempt to compare teachers' perceptions of efficacy and their actual performance, a research study could be conducted to compare the responses to the Teachers' Sense of Efficacy Scale with the yearly evaluations performed by school administrators. Multiple observations could determine any changes from the beginning of the school year to the end of the year, or from one school year to the next.

Moreover, the emerging use of remote observation could assist both the future researchers and beginning teachers in gleaning information about self-efficacy beliefs and actual classroom practice. Remote observation utilizes distance-learning camera systems or Skyping technology to allow real time observation and advisement of interning preservice teachers. This form of electronic supervision could readily be used to provide feedback to novice and alternative certification teachers to supplement their professional development and to provide added opportunities for reflection.

Further investigations into the self-efficacy beliefs of teachers could lead to improved teaching practices, and in turn, increased student achievement. Thus, a broad and deep knowledge of the self-efficacy beliefs of teachers could help to satisfy the requirements of NCLB at state, district, and school-level efforts through sustained professional development and support programs. The need to train and retain highly qualified teachers could be satisfied, in part, by attending to the self-efficacy beliefs of teachers in their day-to-day classroom practice.

APPENDIX A: APPROVAL FROM IRB

University of Central Florida Institutional Review Board
Office of Research & Commercialization
12201 Research Parkway, Suite 501
Orlando, Florida 32826-3246
Telephone: 407-823-2901 or 407-882-2276
www.research.ucf.edu/compliance/irb.html

Approval of Exempt Human Research

From: **UCF Institutional Review Board #1**
FWA00000351, IRB00001138

To: **Julie Shane**

Date: **March 31, 2010**

Dear Researcher:

On 3/31/2010, the IRB approved the following activity as human participant research that is exempt from regulation:

Type of Review:	Exempt Determination
Project Title:	The Efficacy of Effort: Differences in Teachers' Sense of Efficacy Based on Type of Teacher Training and Number of Years of Experience
Investigator:	Julie Shane
IRB Number:	SBE-10-06856
Funding Agency:	
Grant Title:	
Research ID:	N/A

This determination applies only to the activities described in the IRB submission and does not apply should any changes be made. If changes are made and there are questions about whether these changes affect the exempt status of the human research, please contact the IRB. When you have completed your research, please submit a Study Closure request in iRIS so that IRB records will be accurate.

In the conduct of this research, you are responsible to follow the requirements of the Investigator Manual.

On behalf of Joseph Bielitzki, DVM, UCF IRB Chair, this letter is signed by:

Signature applied by Joanne Muratori on 03/31/2010 09:33:00 AM EST

IRB Coordinator

APPENDIX B: APPROVAL FROM BREVARD COUNTY

School Board of Brevard County
2700 Judge Fran Jamieson Way Viera, FL 32940-6699
Brian Binggeli, Superintendent

January 29, 2010

Dear Ms. Shane,

Thank you for your application to conduct research in the Brevard Public Schools. This letter is official verification that your application has been accepted and approved through the Office of Accountability, Testing, & Evaluation. However, approval from this office does not obligate the principal of the schools you have selected to participate in the proposed research. Please contact the principals of the impacted schools in order to obtain their approval. Upon the completion of your research, submit your findings to our office. If we can be of further assistance, do not hesitate to contact our office.

Sincerely,

Sylvia Mijuskovic

Sylvia Mijuskovic, Resource Teacher
Office of Accountability, Testing, and Evaluation

Office of Accountability, Testing & Evaluation
Phone: (321) 633-1000 FAX: (321) 633-3465

APPENDIX C: PERMISSION TO USE SENSE OF EFFICACY SCALE

THE OHIO STATE UNIVERSITY COLLEGE OF EDUCATION AND HUMAN ECOLOGY

ANITA WOOLFOLK HOY, PH.D.

PROFESSOR
PSYCHOLOGICAL STUDIES IN EDUCATION

Dear

You have my permission to use the *Teachers' Sense of Efficacy Scale* in your research. A copy of both the long and short forms of the instrument as well as scoring instructions can be found at:

http://www.coe.ohio-state.edu/ahoy/researchinstruments.htm

Best wishes in your work,

Anita Woolfolk Hoy

Anita Woolfolk Hoy, Ph.D.
Professor

COLLEGE OF EDUCATION
29 WEST WOODRUFF AVENUE
COLUMBUS, OHIO 43210-1177

WWW.COE.OHIO-STATE.EDU/AHOY

PHONE 614-292-3774
FAX 614-292-7900
HOY.17@OSU.EDU

APPENDIX D: QUESTIONNAIRE

Teachers' Sense of Efficacy

1. Your Efficacy Beliefs about Classroom Activities

This questionnaire is designed to help gain a better understanding of the kinds of things that create challenges or difficulties for teachers in their day-to-day school activities.

Please indicate your opinion about each of the 24 statements below. Your answers are confidential.

1. How much can you do to get through to the most difficult students?

	Nothing		Very Little		Some Influence		Quite a Bit		A Great Deal
I can do...	○	○	○	○	○	○	○	○	○

2. How much can you do to help your students think critically?

	Nothing		Very Little		Some Influence		Quite a Bit		A Great Deal
I can do...	○	○	○	○	○	○	○	○	○

3. How much can you do to control disruptive behavior in the classroom?

	Nothing		Very Little		Some Influence		Quite a Bit		A Great Deal
I can do...	○	○	○	○	○	○	○	○	○

4. How much can you do to motivate students who show low interest in school work?

	Nothing		Very Little		Some Influence		Quite a Bit		A Great Deal
I can do...	○	○	○	○	○	○	○	○	○

5. To what extent can you make your expectations clear about student behavior?

	Nothing		Very Little		Some Influence		Quite a Bit		A Great Deal
I can do...	○	○	○	○	○	○	○	○	○

6. How much can you do to get students to believe they can do well in school work?

	Nothing		Very Little		Some Influence		Quite a Bit		A Great Deal
I can do...	○	○	○	○	○	○	○	○	○

7. How well can you respond to difficult questions from your students?

	Nothing		Very Little		Some Influence		Quite a Bit		A Great Deal
I can do...	○	○	○	○	○	○	○	○	○

Teachers' Sense of Efficacy

8. How well can you establish routines to keep activities running smoothly?

	Nothing		Very Little		Some Influence		Quite a Bit		A Great Deal
I can do...	○	○	○	○	○	○	○	○	○

9. How much can you do to help your students value learning?

	Nothing		Very Little		Some Influence		Quite a Bit		A Great Deal
I can do...	○	○	○	○	○	○	○	○	○

10. How much can you gauge student comprehension of what you have taught?

	Nothing		Very Little		Some Influence		Quite a Bit		A Great Deal
I can do...	○	○	○	○	○	○	○	○	○

11. To what extent can you craft good questions for your students?

	Nothing		Very Little		Some Influence		Quite a Bit		A Great Deal
I can do...	○	○	○	○	○	○	○	○	○

12. How much can you do to foster student creativity?

	Nothing		Very Little		Some Influence		Quite a Bit		A Great Deal
I can do...	○	○	○	○	○	○	○	○	○

13. How much can you do to get students to follow classroom rules?

	Nothing		Very Little		Some Influence		Quite a Bit		A Great Deal
I can do...	○	○	○	○	○	○	○	○	○

14. How much can you do to improve the understanding of a student who is failing?

	Nothing		Very Little		Some Influence		Quite a Bit		A Great Deal
I can do...	○	○	○	○	○	○	○	○	○

15. How much can you do to calm a student who is disruptive or noisy?

	Nothing		Very Little		Some Influence		Quite a Bit		A Great Deal
I can do...	○	○	○	○	○	○	○	○	○

16. How well can you establish a classroom management system with each group of students?

	Nothing		Very Little		Some Influence		Quite a Bit		A Great Deal
I can do...	○	○	○	○	○	○	○	○	○

Teachers' Sense of Efficacy

17. How much can you do to adjust your lessons to the proper level for individual students?

	Nothing		Very Little		Some Influence		Quite a Bit		A Great Deal
I can do...	○	○	○	○	○	○	○	○	○

18. How much can you use a variety of assessments strategies?

	Nothing		Very Little		Some Influence		Quite a Bit		A Great Deal
I can do...	○	○	○	○	○	○	○	○	○

19. How well can you keep a few problem students from ruining an entire lesson?

	Nothing		Very Little		Some Influence		Quite a Bit		A Great Deal
I can do...	○	○	○	○	○	○	○	○	○

20. To what extent can you provide an alternative explanation or example when students are confused?

	Nothing		Very Little		Some Influence		Quite a Bit		A Great Deal
I can do...	○	○	○	○	○	○	○	○	○

21. How well can yo respond to defiant students?

	Nothing		Very Little		Some Influence		Quite a Bit		A Great Deal
I can do...	○	○	○	○	○	○	○	○	○

22. How much can you assist families in helping their children do well in school?

	Nothing		Very Little		Some Influence		Quite a Bit		A Great Deal
I can do...	○	○	○	○	○	○	○	○	○

23. How well can you implement alternative strategies in your classroom?

	Nothing		Very Little		Some Influence		Quite a Bit		A Great Deal
I can do...	○	○	○	○	○	○	○	○	○

24. How well can you provide appropriate challenges for very capable students?

	Nothing		Very Little		Some Influence		Quite a Bit		A Great Deal
I can do...	○	○	○	○	○	○	○	○	○

Teachers' Sense of Efficacy

2. Your Teacher Training and Classroom Experiences

Please indicate your opinion about each of the 6 statements below. Your answers are confidential.

You may add a confidential comment if you wish.

25. How well did your teacher training prepare you to effectively engage students?

	Very Little		Some Influence		A Great Deal
My training contributed...	○	○	○	○	○

Comment:

26. How well has your personal classroom experience prepared you to effectively engage students?

	Very Little		Some Influence		A Great Deal
My experience has contributed...	○	○	○	○	○

Comment:

27. How well did your teacher training prepare you to effectively implement instructional strategies?

	Very Little		Some Influence		A Great Deal
My training contributed...	○	○	○	○	○

Comment:

Teachers' Sense of Efficacy

28. How well has your personal classroom experience prepared you to effectively implement instructional strategies?

	Very Little		Some Influence		A Great Deal
My experience has contributed...	○	○	○	○	○

Comment:

29. How well did your teacher training prepare you to effectively manage your classroom and your students?

	Very Little		Some Influence		A Great Deal
My training contributed...	○	○	○	○	○

Comment:

30. How well has your personal classroom experience prepared you to effectively manage your classroom and your students?

	Very Little		Some Influence		A Great Deal
My experience has contributed...	○	○	○	○	○

Comment:

Teachers' Sense of Efficacy

3. Demographic Information

*** 31. How many years of teaching experience do you have?**

- ◯ Withing the first year of teaching
- ◯ Completed 1 full year of teaching
- ◯ 2 - 3 full years of teaching
- ◯ 4 - 5 full years of teaching
- ◯ 6 - 9 full years of teaching
- ◯ 10 - 15 full years of teaching
- ◯ 16 or more full years of teaching

*** 32. What is your teacher training background?**

- ◯ College of Education classes
- ◯ Alternative Certification Program

Other (please specify)

33. What is your gender?

- ◯ Male
- ◯ Female

34. What is your racial-ethnic background?

- ◯ White
- ◯ Black/African American
- ◯ Hispanic
- ◯ Asian
- ◯ Native American or Pacific Islander
- ◯ Multi-Racial

APPENDIX E: EXPLANATION OF RESEARCH

University of Central Florida

EXPLANATION OF RESEARCH

Title of Project: **The Efficacy of Effort: Differences in Teachers' Sense of Efficacy Based on Teacher Training and Number of Years of Experience**

Principal Investigator: **Julie Shane**

Faculty Supervisor: **Kay Allen, PhD**

You are being invited to take part in a research study. Whether you take part is up to you.

- The purpose of this research study is to identify any differences in the self-efficacy beliefs of teachers from traditional college of education programs as compared to teachers from alternative certification programs, and any differences in the self-efficacy beliefs of novice teachers as compared to experienced teachers.
- Participants in this study will be asked to respond to 30 items on a questionnaire, as well as identify their type of teacher training, number of years of teaching experience, gender, and racial-ethnic background. Participation in the study is voluntary. You do not have to answer every question.
- The questionnaire should take no more than 15 minutes to complete. Communication between the researcher and the participants will be conducted via Brevard county email system. Approval has been secured from Brevard County Office of Testing, Evaluation, and Accountability, from principals as the school sites, and from UCF Institutional Review Board.

Study contact for questions about the study or to report a problem: If you have questions, concerns, or complaints, please contact Julie Shane at Bayside High School by email at Shane.Julie@Brevardschools.org or (321)956-5000 ext. 3692. Or contact Dr. Kay Allen at the College of Education by email at kallen@mail.ucf.edu or (407)823-2037.

IRB contact about your rights in the study or to report a complaint: Research at the University of Central Florida involving human participants is carried out under the oversight of the Institutional Review Board (UCF IRB). This research has been reviewed and approved by the IRB. For information about the rights of people who take part in research, please contact: Institutional Review Board, University of Central Florida, Office of Research & Commercialization, 12201 Research Parkway, Suite 501, Orlando, FL 32826-3246 or by telephone at (407) 823-2901.

APPENDIX F: CONTACT LETTERS

Dear Fellow Teacher,

Within a few days you will receive a request to fill out a brief questionnaire for a research study being conducted in the high schools in Brevard County. This research addresses the self-efficacy beliefs of teachers as they work with students and fellow teachers. The research study is part of my dissertation work at UCF. I am trying to determine if there are any differences in self-efficacy beliefs between novice and experienced teachers and also between teachers with college of education training or alternative certification training.

I am writing in advance because many people like to know ahead of time that they will be contacted. There are 30 items on the questionnaire and it should take less than 15 minutes to complete. I thank you in advance for your time and consideration. It is only with the generous help of my fellow teachers that my dissertation research can be successful.

If you do not want to be involved in the research study, please reply to this email and I will remove your name from the random sample of high school teachers in Brevard County.

If you are not a classroom teacher, please reply and I will remove your name.

Sincerely,

Julie Shane

Bayside High School
321-956-5000 x3692
Shane.Julie@Brevardschools.org
shanej@cfl.rr.com

Dear Fellow Teacher,

I am writing to you to ask your help in a research study of Brevard County high school teachers that I am conducting in conjunction with my dissertation for UCF. This research study investigates the differences in self-efficacy beliefs between novice and experienced teachers and also between teachers with college of education training or alternative certification training.

I am contacting a random sample of 298 high school teachers throughout Brevard County to ensure the results of the study are equitable and represent the entire county. Your answers are completely confidential and will be released only as summaries in aggregate form in order to guarantee that no individual's name can be identified. The survey is voluntary. However, to obtain the most reliable results, it is important that each teacher's opinions and beliefs are included in the research study.

Attached is a Letter of Consent that is required by the Institutional Review Board at UCF for all research projects. The purpose of the Letter of Consent is to inform you that your responses to the questionnaire are anonymous and that participation is voluntary. You do not need to sign the form. Your participation in the study implies your consent.

If you have any concerns about this research study, please contact me by phone or email. In addition, you may contact my advisor, Dr. Kay Allen, or the University.

Thank you very much for helping with this research study.

Please click on the link to go to the questionnaire.

http://www.surveymonkey.com/s/YV258SG

If you prefer a hardcopy, the questionnaire is attached and you can return it to me at Bayside via the county courier system.

If you prefer not to participate, or if you are not a classroom teacher, please respond to this email and your name will be removed from the contact list.

Sincerely,

Julie Shane

Dear Fellow Teacher,

Recently a questionnaire about teachers in Brevard County was sent to you. Your name was selected randomly from a list of secondary teachers throughout the county.

If you have already completed and returned the questionnaire, please accept my sincere *thank you*. It is only through the kindness and consideration of fellow teachers like you that my research can be successful.

If you have not yet responded, please do so *today*! I am grateful for your help because it is only by asking Brevard teachers to share their beliefs that I can understand some of the differences between novice and experienced teachers, and between traditional college of education training and alternative certification training.

Please follow the link to the questionnaire. If you prefer a hardcopy, the questionnaire is attached.

Please click on the link to go to the questionnaire.

http://www.surveymonkey.com/s/YV258SG

Thank you,

Julie Shane

Bayside High School
321-956-5000 x3692
Shane.Julie@Brevardschools.org
shanej@cfl.rr.com

APPENDIX G: COMMENTS FROM ITEMS 25 – 30

How well did your teacher training prepare you to effectively engage students?

Ideas shared by other teachers at inservices and math conferences taught me new approaches.

Trained in El. Ed. Teach H.S. Two totally different animals.

I went to UCF and received great current research-based practices. My internships that UCF coordinated prepared me very well for my first year of teaching.

Lifelong learning

I never had formal training as a teacher. My degree is in Psychology (University of Florida, 1975) with a minor in Mathematics. I did not go to UF and major in Education. By chance, 35 years ago, I was given a short-term contract to fill in for a teacher who was dismissed. I chose to stay, take 18 hours over 3 years and gain certification. Maybe that's part of my success....never having to listen to a bunch of Ivory-Tower academics tell me how to teach was probably a plus.

While my degree was not in education, I did take a number of courses related to the field. The examples that we used in class seemed to primarily focus on the "ideal" classroom not the "real world" classroom.

my university classes did prepare me very well

almost no training

I feel like my teacher training gave me the concrete preparation for my job but it did not, nor could it have, given me the intangibles effectively engage students. Therefore, I work every day to get better at that task.

What is taught in the colleges and the theories/practices are simply not realistic. In theory, they are fine, but not when you step into a classroom for the first time.

Ed classes virtually useless, except for a few hands on /concrete skills. Subject classes very helpful. Mostly on the job training.

Had to be learned and re-learned as I developed as a teacher. I am still in need of training and will be as long as I am a teacher.

Training much too limited and directed by the teacher in charge.

Personal experience works best.

I first became a vocational teacher which emphasized hands on learning - learning to do; doing to learn. I keep that approach in my now academic course.

My masters program influenced my assessment and classroom practices.

I am at a very supportive school and that makes all the difference in establishing classroom climate when dealing with most difficult students.

My training is in Emotional Disturbance in Exceptional Education. I felt UCF prepared me very well but I had some experience teaching music in a private school prior to going back to school to be a special education teacher.

It gave me the strategies to use, but in training is nothing like having your own classroom of students. Having your own class is so much more difficult.

I did not have any teacher training.

It's really OJT to a great extent, as well as peer support.

The county new teacher training seemed geared to elementary teachers

To the use of general techniques regarding classroom management. It also enabled me to write effective lessons in the required format.

I have a non-education major, so my education classes were the minimum required. My preparation came from mentors who were wonderful!

Mostly through trial and error

Teaching often becomes hands-on training. The most difficult year is the first year.

I needed classroom experience to understand the wide variations within the student population, how each person learns, etc.

I was taught how to deal with disruptive students and teaching strategies

The classes I took to receive my Master of Arts in Teaching were very helpful

The courses I took oftentimes were not specific enough to the types of kids I teach to be truly effective in helping me gain strategies for high school kids.

too long ago to really remember

I took my teaching classes as a post-bac, and they were all geared to elementary school. Since I teach at a high school, they didn't help much.

The majority of my teacher training was based on the elementary school setting.

Most college classes and workshops after college

My methods classes helped me prepare to teach.

My training allowed me to cultivate ideas to implement in my classroom. Being with other teachers-in-training provided a brainstorm of ideas that I probably would not have been able to come up with on my own. It provided, in a way, a network for implementation

I recently completed a masters level endorsement in teaching students with autism and profound disabilities at UCF.

In 5 years of college, I had 2 classes that provided actual useful tools, not just paper-pushing skills. Programs where pre-service teachers have little contact with practicing classroom teachers are a disservice all the way around.

How well has your personal classroom experience prepared you to effectively engage students?

Continuously learning what methods seem to work best and improving upon the delivery to better engage students.

Of course you continuously learn new strategies, but I was well prepared with tools to engage students.

Experience helps you understand the students better.

You can't fake 35 years in teaching...most kids want 2 things, other than knowledge....to be treated with respect and fairly. And at the same time, try and have a little fun with them.

I have learned far more from trial and error about how to get my students interested in learning than most things that I learned through my training.

Being a 20 year teacher is more important than what I learned in college!

I am a student! I learn something about students, teachers, administrators, parents, classroom management, teaching strategies just about every class of every day, everyday.

25 years, multiple grade levels, communities, ability levels, languages and subjects.

Almost everything I have learned has been through being in the classroom.

I have thirty years of tricks to fall back on. It took ten years to really feel competent.

Many student behaviors I already dealt with in the past.

I am a reflective teacher and almost every day is a learning experience. That doesn't mean it isn't very difficult sometimes. The less motivated a student is by personal, family and peer expectations, the harder it is for the teacher to close that gap.

Even after 16 years of experience I continue to learn new ways on how to deal with classroom behaviors and teach math concepts

Learning everyday how to handle different situations.

You must be able to self evaluate strengths and weaknesses.

To my effectiveness as a teacher because I have been faced with so many really challenging situations. I am able to adjust my teaching to various learning styles within the same class because experience taught me that all students are capable of learning, but may need to be introduced to differing strategies.

Each year I grow tremendously as my students teach me how to improve my skills.

Raising my own children gave me more preparation than any classroom experience!

Nothing beats experience, and trial and error. More experience gives you a chance to try out lessons, keep what works, and discard or "revamp" what doesn't work.

My personal experience in a classroom has opened my eyes to the many differences in generations of students. As a student I was very in tune to what was expected of me and made that my priority. As time goes by I have realized that these students have a different set of priorities, and thus a different mindset on the value of education

I have taught the same type of students for over 15 years.

How well did your teacher training prepare you to effectively implement instructional strategies?

College + the real thing are 2 different things.

IN my ExEd degree we spend much time creating and investigating numerous strategies to teach to all levels from participatory to gifted.

See number 25.

Fantasy in the college class vs. reality in the classroom

little, more and better ideas from training provided on the school and district level, but less time to reflect.

Had good modeling of this in college from the teachers I observed and worked with.

I was fortunate to get the same type of position that I had in training.

Personal experience and inservices of interested topics works best.

One of my certifications is in Specific Learning Disabilities in which I took classes on how to use a variety of strategies for various type learners.

The strategies learned were great but in the classroom adjustments have to be made.

I did not have any teacher training.

Strategies evolve over time. you have to be open to trying new ideas.

relatively little because every school appears to have different materials available, so different strategies have to be developed and used for the student population and materials.

See response to #24

we receive recertification training every five years which cover instructional strategies, thinking maps ...

LONG TIME AGO - if students didn't cooperate, they were suspended - end of problem If students didn't do homework, etc, they failed

I learned a little bit about effectively organizing cooperative learning, and I'm still using it 14 years later.

The majority of the strategies were based on elementary children, however after some experience in the classroom the strategies could be altered.

Professional Development helped more than teacher training preparation in college.

In training I was able to test out ideas and resources with the supervision of someone who already knew how to handle situations. That kind of fostering allowed me to feel more comfortable when "flying solo".

Again, my teacher training program was a whole lot of theory and not much else.

How well has your personal classroom experience prepared you to effectively implement instructional strategies?

With constant reflection I am able to fine tune what does and does not work each class period I teach.

Years ago I "over-taught" material....crammed as much in as I could because that is what I thought was expected of me. Little did I realize then that kids can absorb only so much. Today's child is different....very impatient and really just wants the facts concisely and quickly, just as they live life.

After 20 years I have learned to always have work prepared for kids, but with a million field trips and other interruptions, flexibility from 1st period to 2nd period, for example, is crucial each day.

Always learning and drawing upon experiences.

I know what works and what does not work for me. I can watch co-workers and model what they are doing that works.

I now have a better understanding of how receptive my age group of students will be and how to get them to "buy into the strategy."

There is nothing like actual classroom experience to prepare you on how to deal with live students.

I'll try almost any new idea at least once!

by allowing me to go beyond the traditional materials and make connections for students to present time and place in order to make my material relevant.

It is a learning process . . . I find new ideas every year

How well did your teacher training prepare you to effectively manage your classroom and your students?

We were offered a whole class on behavior at UCF. My best examples came from working with an ABA that contracts with the district. I worked with him during my internship and learned many invaluable resources.

This was the weakest area of training for me. Nothing will prepare you for the classroom like being in the classroom. Mentoring in the school for beginning teachers is vital.

I learned zip about classroom management in college. I learned the most in this area by watching other teachers I respect and modeling them. I also bought a book on class discipline which helped me a lot to deal with mean or dumb parents!

All I heard were the horror stories and how tough-minded a teacher had to be. It is one thing to read about classroom management and another to actually implement it. Especially the teacher/administrator and teacher/parent interaction(s) and support or lack of it.

Interning helped prepare me for the classroom.

Focus was only on elementary students.

When I student taught, most of the management was handled by my cooperating teacher at the beginning of the year. I think this is true in general and one of the reasons the first few years are so hard.

I do not remember much on classroom management from college.

I did not have any teacher training.

Again...OJT and maturity.

by showing me different strategies for behavior management.

See response to #24

Classroom management is dependent on the student make-up of the individual class. Students can detect a teacher who is insincere and unsure.

I don't think any training can prepare an individual for what they will experience in a classroom and those experiences vary from region to region (even neighborhood to neighborhood)

I learned more from reading books like Harry Wong's "The First Days of School" and Todd Whitaker's "What Great Teachers Do Differently"

As stated above, students were removed if they didn't behave properly.

It gave the basics but not with not a great deal of practice in different settings made them awkward to implement.

This was one of two useful classes. The instructor was a classroom teacher, so the class was practical, useful, and relevant.

The most beneficial aspect of teacher training in the university is the internship process because it is a mixture of practical experience with guidance from an experienced professional.

How well has your personal classroom experience prepared you to effectively manage your classroom and your students?

Behaviors are the most dangerous thing about my room. Before any teaching can occur, behaviors must be controlled. With the help of my staff and the above mentioned behavior analyst, we have been able to travel miles from where we began and the beginning of the year. Behavior can be an ever changing puzzle that I must remain tuned in to.

You quickly learn from your mistakes and hope to survive. it also has helped me to watch other teachers I respect, listen and learn from them, and then incorporate those learning into my own unique style.

I had a tough instructor in college whom held us very accountable for time management and class discipline. At the time did not care for what we had to do but when I started teaching and was organized and disciplined myself it was a huge carry over to the way my classes were managed.

Always learning

Experience has been the best preparation over the years.

The more experienced I get the better my management becomes.

Real world work and training is more effective than teaching programs in colleges. Understanding the content is most important, as is caring about what you're teaching. Too much emphasis is placed on "teaching strategies" and not enough is placed on real knowledge. Educational theory is just that- someone's idea of what works, not real research on what actually goes on in the classroom, and what students need to KNOW to be successful.

Live and learn...constantly!

in that I have learned to treat each student and each class as individuals, which causes me to adjust my techniques continuously.

Both my classroom experiences and my parenting experiences have greatly helped me.

I subbed while I was still in college, so I managed a classroom long before I ever had to run it. I've always felt comfortable with classroom management.

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